Agenda Item	6.2
Report No	PLS/023/19

HIGHLAND COUNCIL

Committee: South Planning Applications Committee

Date: 12 March 2019

Report Title: 18/03110/FUL: Vento Ludens Ltd
Land 2400M NW of Ardechive Cottage, Achnacarry, Spean Bridge

Report By: Area Planning Manager – South

Purpose/Executive Summary

Description: Construction of a 950kW run of river hydro scheme, including intake, buried pipeline, turbine house, outfall, grid connection & access tracks (Allt Mhuic)

Ward: 11 – Caol and Mallaig

Development category: Local

Reason referred to Committee: Number of objections

All relevant matters have been taken into account when appraising this application. It is considered that the proposal accords with the principles and policies contained within the Development Plan and is acceptable in terms of all other applicable material considerations.

Recommendation

Members are asked to agree the recommendation to **Grant** planning permission as set out in section 11 of the report.

1. PROPOSED DEVELOPMENT

1.1 This is a run of river hydro scheme, up to 950kW in power, with a single intake on the Allt Mhuic, on the north side of Loch Arkaig. The woodland and part of the hill above Allt Mhuic is a private butterfly reserve, owned by Forest Enterprise Scotland and jointly managed with Butterfly Conservation Scotland for its butterflies, in particular the Chequered Skipper butterfly. There is a small car park next to the public road which runs along the north shore of Loch Arkaig, and a waymarked trail leading up the east side of the river, to a forest track that runs east - west across the glen, and the trail leads back down the west side of the river. The butterfly reserve extends further up the hill than this path, as far as a deer fence approx. 1km from the public road.

1.2 The intake would be approx. 1.8km up the hill from the public road at an elevation of approx. 260m AOD. It would measure 17.8m wide in total, comprising a concrete weir incorporating a “coanda” screen 4m wide and a compensation flow channel 0.8m wide alongside it, and concrete wing walls. The weir and screen would be 2½m high from the bed of the burn. Approx. 3 trees would be lost to accommodate the intake.

1.3 The penstock would come out of the intake onto the west side of the burn, it would be 630mm diameter, undergrounded, and it would be taken down the west side of the watercourse for approx. 160m before crossing to the east side of the burn via a pipe bridge. The penstock would be 1800m long in total. The construction corridor would be 15m wide along most of its length, with some narrower sections to avoid sensitive habitats. There would be a permanent access track from the forest track up to the intake along the line of the penstock, and this would cross the burn alongside the pipe by a bridge comprising a timber deck 2.6m wide, with handrails. The trench for the pipe would be 1m deep by 1m wide. The track would be restored down post-construction to a running width 2m wide, with corner sections 2.5m wide.

1.4 Three compounds/laydown areas are proposed: one next to the existing car park at the bottom end of the scheme, the second at an elevation of approx. 130m AOD, immediately below the forestry track that crosses the site approx. 650m up from the public road, and the third just downstream of the pipe bridge (at approx. 250m AOD) – on the east bank of the watercourse.

1.5 Two borrow pits are proposed with a third possible borrow pit utilising an existing Forestry Commission quarry on the existing forest track approx.1½km to the east: BP1 would be approx. 60m uphill from the forest track that crosses the site, and alongside the route of the penstock, and BP2 approx. 575m up from the forest track – approx. half way between the track and the intake – at an elevation of approx. 220m AOD. This higher borrow pit would also be used for the disposal of surplus material from the construction works.

1.6 The powerhouse would be sited next to the Allt Mhuic, just over 100m upstream from the public road and car park. It would measure 8.2m by 10.2m, by 4.5m in height to the eaves and 6m to the ridge, with a pigging chamber on the side (to allow for maintenance of the penstock pipe). It would be sited on a steep slope

and a fairly significant amount of cut and some fill would be necessary for its construction on the riverbank. A cut of up to 2.7m and fill of 1.5m is shown on the drawings. The powerhouse is to be clad in larch and will have a steel profiled metal roof, grey in colour, and there would be a small compound (3.5 x 2.8m) to house a transformer alongside it, contained on two sides by concrete retaining walls up to 4m high, and there would be a small area of concrete hard standing in front (3 x 5.2m). The outfall would lead water back into the Allt Mhuic – this would comprise a galvanised steel screen, and concrete apron with rock armour guarded by a timber handrail. A new permanent access track, approx. 100m long, would lead from the existing car park to the powerhouse.

1.7 The preferred grid connection is into the existing underground line that runs along the north side of the public road, which already serves hydro schemes at Ardechive to the east and Allt Cheanna Mhuir to the west. If permission cannot be secured for the preferred option, an alternative route is proposed up the penstock route as far as the forest track and then east along the forest track for approx. 1.8km to join the public road for 500m or so to Ardechive.

1.8 Access for construction traffic would be taken from the A82 at the Commando Memorial, the B8004 to Gairlochy, the B8005 past Achnacarry and Clunes to the eastern end of Loch Arkaig at Cia-Aig, and then the C1153 which continues along the north shore of Loch Arkaig. A proportion of the construction traffic would access the site via the forest track and so avoid the last section of the minor road, and only the vehicles and machinery needed to construct the bottom part of the scheme would follow the minor road to the existing car park entrance into the reserve. It was intended that this scheme be constructed concurrently with another proposed hydro scheme at Allt Chailleach which is further west along Loch Arkaig, however this application has now been withdrawn following a recommendation of refusal (18/03860/FUL).

1.9 Pre Application Consultation: None

1.10 Supporting Information: Archaeology Survey, Bat Survey, Bryophyte Survey, Ecological Report, Draft Construction Method Statement, Hydro scheme construction standards, Hydrology Report, Landscape and Visual Impact Assessment, lichens report, Supporting Information, Ornithology Report, NVC Review, Traffic Management Plan, Chequered skipper butterfly survey, detail of bridge and pipe crossing, drawing showing peat depths and NVC map; responses to consultees comments with respect to NVC, CMS, Traffic Management, habitats and species mitigation, and trees.

1.11 Variations and additional information:

- 22 Oct 2018: Construction Method Statement, Construction Traffic Management Plans, Butterfly information
- 19 Dec 2018: amended site layout plans, C067-103 Rev.C General Plan with existing trees, C067-103 Rev.C Pipeline Details 1 of 4 with RPAs, C067-103.2 Rev.B Pipeline Details 2 of 4 with RPAs, C067-110 Site Layout Plan – Native Woodland and tree replanting, access plan C067-109, plan showing alternative layouts considered C067-111
- 19/20 Dec 2018: amended layout plans, addendum to LVIA (incl. further ZTV maps and photos), additional supplementary information, arboricultural report, Butterfly appraisal, alternative layouts previously considered, compensatory planting.
- Construction compound moved from immediately north of the existing public car park to a site to the north east of the car park to avoid trees.
- 24 Jan 2019 Updated schedule of mitigation; Updated construction method statement; reduction of post construction track width to 2m (2.5m at corners) with a green central strip; reinstatement monitoring/remediation period extended from 2 to 5 years; additional planting in area above access track and above turbine houe
- 30 Jan 2019 : access to car park detail
- 4 Feb 2019: bottom end of Penstock and Native Woodland Survey of Scotland (NWSS) drawing

2. SITE DESCRIPTION

2.1 The lower 660m of the scheme would be through native woodland, which is most dense closest to the river and alongside the public road, which runs along the shore of Loch Arkaig. The ground is more open away from the river and lochside. Above the forestry track the land is open hill comprising wet heath, with some riparian woodland extending up the river bank as far as the intake. The river corridor becomes increasingly steep sided in the upper third of the scheme. Benching is proposed here with steep embankments on the upslope side which would be stabilised using geotextile membranes. Trees would be lost as a result of the proposed development, and compensatory tree planting is proposed around the powerhouse, by the penstock, and by the pipe and track bridge.

2.2 The Allt Mhuic Butterfly Reserve is promoted as having public access with a waymarked trail, the eastern half of which would partially coincide with the penstock route. A very rough path/quad bike route also continues up the east side of the glen beyond the forest track, and accesses the upper glen via a gate in the deer fence. Temporary path closures would be required during construction (anticipated between Sept and Nov 2019).

2.3 The woodland is listed on the Ancient Woodland Inventory, and the top 900m or so of the development is within the Kinlochhourn – Knoydart – Morar Wild Land Area. This includes Borrow Pit 2, the pipe bridge and the intake. The site is approx. 4km west of the Loch Lochy and Loch Oich Special Landscape Area (SLA), and 10km east of the Moidart, Morar and Glen Shiel SLA.

3. PLANNING HISTORY

3.1	7 April 2017	17/00509/SCRE: 950kW run of river hydro scheme (Allt Mhuic)	SCREENING APPLICATION - EIA NOT REQUIRED

4. PUBLIC PARTICIPATION

4.1 Advertised: Oban Times - Schedule 3 development

Date Advertised: 19 July 2018

Representation deadline: 8 August 2018

Timeous representations: 26

Late representations: 2

4.2 Material considerations raised are summarised as follows:

- Impact on breeding pair of golden eagle from disturbance
- Adverse impact on ancient woodland
- Adverse impact on habitat of skipper and pearl bordered fritillary butterflies; which is unlikely to be fully restored
- Impact on riparian bryophyte and lichen communities
- Development will make the butterfly reserve less attractive for visitors
- Concerns that the extraction of water would have a significant negative effect on water levels making it less suitable for kayaking
- Requirement for permanent access track, as opposed to an ATV track unjustified
- mitigation to accommodate kayakers on another scheme nearby has resulted in a lethally dangerous weir [on the River Arkaig] – developers have little knowledge or regard for river users
- detracts from the landscape
- scheme is reliant on artificial government funding which is due to end early next year [end March 2019]
- impact on tourism
- it would not generate enough electricity to be worth the permanent environmental impact
- loss of a test piece of Scottish kayaking – which attracts people from all over the country and Europe – and brings in kayakers during the quieter winter months
- the stream runs at a trickle most of the year and won't generate anywhere near the proposed levels required for a hydro scheme
- impact on the nature reserve, pine marten, butterflies and red squirrels
- other forms of renewable energy utilising tidal flows would be less

damaging to the environment

- this river contributes to Lochaber's reputation as a top class destination for outdoor sports
- no photo montages of the proposed structures making an assessment of the landscape and visual impact impossible
- cumulative impact along the north side of Loch Arkaig
- other butterfly species that may be affected include the large heath butterfly – vulnerable in a European context, the Scotch Argus which is near threatened, and several rare orchid species including the Lesser Twayblade and the Heath Spotted orchid.
- Loch Arkaig was the last known nest site of ospreys as they neared extinction in the 1910s. The Loch Arkaig Pine Forest is now home to a young breeding pair of ospreys who successfully raised a chick last year. These vulnerable birds may be subject to disruption if this scheme is approved
- The development flies in the face of Forestry Commission policy which is to restore ancient woodlands which have been converted to plantations under their management – as a public body FCS should be setting an example of best practice to other forest managers and land owners rather than opportunistically cashing in on renewable energy income at the expense of a diminishing natural resource
- Impact on a range of semi natural habitats including upland flushes, blanket bog and upland heathland – as well as upland oak woodland and upland birchwood
- The Habitat survey was undertaken in November 2016 – which is not a suitable time for surveying many of the plant species that are not visible or flowering at that time of the year, such as orchids; no reference is made to the vegetation survey carried out in 2001 for Forest Enterprise
- nor is there reference to previous records for notable species available on the NBN [National Biodiversity Network] Gateway, such as Lesser Butterfly Orchid and Wilson's Filmy fern or SBL [Scottish Biodiversity List] species mentioned in FCS's own leaflet for the reserve such as Small White orchid and Azure Hawker dragonfly -found only in Scotland.
- No survey of the distribution of the key butterfly species – chequered skipper and pearl bordered fritillary – so conclusions about impacts can only be speculated
- The ecological report identifies trees as Common oak and silver birch – but these are surely more likely to be sessile oak and downy birch which are the dominant species here
- The installation of the power cable – [for another hydro scheme further along Loch Arkaig] has already damaged the southern margin of the reserve
- The chequered skipper has its own parliamentary Species Champion [Kate Forbes MSP] – a Scottish Environment LINK initiative– it is a high profile

species

- A precautionary approach should be taken towards looking after its habitat in line with the biodiversity duty in the Nature Conservation (Scotland) Act 2004
- Reinstatement is fraught with problems and claims of its effectiveness are all too often unrealistic
- Such natural heritage is essential to our mental and physical well being
- Transplantation of lichens is likely to fail, and is not suitable mitigation for felling trees with lichen interest
- A wildlife tourism operator observed three wildlife species of conservation importance when they visited the site in late June 2018: Azure Hawker dragonfly, Northern Emerald Dragonfly (near threatened), and Argent and Sable Moth – UK Biodiversity Action Plan priority species (they visited too late in the year to see the chequered skipper and pearl bordered fritillary butterfly)

4.3 All letters of representation are available for inspection via the Council's eplanning portal which can be accessed through the internet www.wam.highland.gov.uk/wam.

5. CONSULTATIONS

5.1 **Spean Bridge Roy Bridge and Achnacarry Community Council** has advised as follows:

Spean Bridge, Roy Bridge and Achnacarry Community Council appreciate the support from the Planning Officer in allowing us an extension to fully consider and discuss this application. We have examined the Highland wide Planning Policies, and the various Supplementary Guidance and have come to the conclusion that although past Micro Hydro installations have impacted significantly on local residents unlike some correspondents we are not proposing objection to the proposals, but support with some enforceable planning conditions.

Renewable Electricity Generation is an important source of green energy and should be encouraged, and not dismissed by those who visit infrequently or have minority interests.

Despite Glen Hydro producing a road management plan Policy 56 Travel the access roads from the trunk road network namely the B8004, B8005 and Cl153 are narrow and twisty rural roads. Unfamiliar HGV drivers have often found the soft verges particularly in the Dark Mile unforgiving, and slid into roadside ditches closing this lifeline access till they can be removed. It is important therefore that an assembly point is established near the start of the B8005 where vehicles must stop, await instructions, and proceed in convoy with an experienced driver leading.

Glen Hydro have advised that there should be no more than 10 people working on the site, and they may be housed in temporary accommodation nearby. Previous similar projects have shown that contractors have driven carelessly and this has had a detrimental effect on local residents. Glen Hydro have offered an informal

monitoring arrangement, but an enforceable planning condition would carry more weight, and give greater assurance to local communities.

Connecting to the grid too has in the past led to supply interruptions and outages, as well as road disruption. The applicant is in negotiations with Green Highland Renewables to access their connection, or failing that to avoid unnecessary roadworks by using the forestry track to avoid disruption. We feel that this answers the provisions in Policy 69 Electricity Transmission Infrastructure.

We were pleased to see that some contributors were concerned about the impact on the local economy, but perplexed that they did not see the benefits of jobs, the supply chain, accommodation, and community benefit. We believe this proposal fulfils a positive impact Policy 67 Renewable Energy Development.

The Developer intends to use a borrow pit or dormant quarry to avoid unnecessary transport Policy 53 Minerals, and Policy 28 Sustainable Design and has plotted a track to avoid deep areas of peat thus avoiding needless disturbance, degradation, and erosion of Peat and Soils Policy 55. We would expect planning condition provision to ensure restoration of the site after completion of the Development.

The protection of Trees and Woodland Policies 51 and 52 of the Highland Wide Plan, are important but the proposal only envisages the removal of one oak and a number of silver birch. The Planning authority will require compensatory broad leaf planting and the Developer has offered additional tree planting.

If the Forestry Commission, and Scottish Natural Heritage who have done more than most to conserve ancient woodland and protect the butterflies are willing to allow this development then we cannot see any logical reason to object, and every reason to support this development.

5.2 **THC Access Officer**: The path circuit around the site is promoted by the Forestry Commission and Walkhighlands websites, and it is a candidate Core Path. The path on the east bank of the burn extends beyond the forest road. Complaints have recently been received by the Council about the locked gate and condition of a stile at the deer fence. This route may be used as an alternative approach to, or descent from Gael Charn [a “Corbett” at 804m] or Sgurr Choinnich [a “Graham” at 749m]. The forest road to the east of the river would also be affected by development, the grid connection being proposed along it and a compound and laydown area adjacent to it, as well as a construction access. The proposal would have an impact on the use and amenity of paths during construction, and unless mitigated, during the operational phase too.

An access management plan is therefore sought that would :

- be plan based
- detail the arrangements for safely accommodating walkers during the construction period
- confirm that pass gates will be installed by any gates along tracks and roads – not stiles or kissing gates – and illustrate their locations and designs
- detail and illustrate the designs and location of any access management

and informative signs

- detail the design standards the path between the forest road and car park on the east side of the Allt Mhuic will be reinstated to

5.3 **Transport Planning Team,** following submission of Construction Traffic Management Plan together with video and photographic survey information, removed its original objection and recommends conditions be attached to any permission requiring the Construction Traffic Management Plan to be enhanced with a suitable escort arrangement for large construction vehicles, together with further information on the detail of the construction management, the pre-start repair of a culvert, prevention of parking/loading/unloading on the public road, widening of the bellmouth at the entrance to the reserve, and formal wear tear agreement being in place before work commences.

5.4 **SEPA** has no objection subject to the following observations, and **conditions (shown in bold)**:

- Surface water mitigation identified in dwgs C067-103.1B, C067-106C, C067-103.4C deals with mitigation of works within the 10m buffer of the water environment, and info in section 2.1 of the Planning application Supplementary Information (Document No.CO67-006 dated 23 Aug 2018)
- **Site compound area near the intake will be reinstated following construction of the intake and bridge as described in section 3.4 of Supporting Information**
- Where it is impractical to have cut off drains above the track, any surface water will be treated before it can reach a watercourse such as discharging above a suitable vegetation buffer (Supplementary Information Section 2.1.1 – Pollution of watercourses, and dwg no.CO67-103.4)
- Supplementary Information section 2.3.2 (Document No.CO67-006) which states that Borrow Pit 2 will be utilised for temporary storage of the benching material – alternative storage areas identified if BP2 proves not to be viable
- The steep section of benching shown on dwg No.CO67-106C is a high risk area which will require close monitoring to ensure the mitigation is functional and adequate; sediment traps will have to be removed appropriately once works are complete
- The loss of W4 habitat to the footprint of the powerhouse should be kept to a minimum – this relatively small loss can be accepted because it is a small proportion of the overall W4 habitat present
- **A hydrological barrier should be used to prevent the drawdown of the water table in the GWDTEs surrounding the powerhouse**
- **Access and parking areas surrounding the powerhouse should be constructed from permeable materials to allow for the hydrological connection of the remainder of the GWDTE habitat – as shown in dwg no.CO67 – 103.1**
- **M25 habitats to be avoided by the borrow pits, construction**

compound and lay down areas, and any access track crossing this habitat to be floated

- Flush habitats to be physically marked out on site prior to construction
- The CMS to cite indicative spacing for water stops along the pipe route
- **Borrow pits to be restored using residual material leaving a natural ground profile, tapered into the landscape and restored with turves; finished ground levels not to exceed the original ground level by more than 2m**
- **Should Borrow Pit 2 not prove viable, further details will be required of alternative disposal options (possible use of existing FCS borrow pit PB3), and SEPA to be re-consulted**
- Welcome commitment to store turves upslope from excavations and undertake daily checks for sediment management
- Pipeline to be excavated in lengths not more than 100m at a time, except where impractical, in which case a risk assessment will be completed
- **Following documents to be approved:**

  i) finalised version of the Construction Method Statement (Document No.C067-004)

  ii) Drawing No.C067-103 Pipeline 1 (with surface water management)

  iii) Drawing No.C067-103 Pipeline 4 (with surface water management)

  iv) Drawing No.C067-106 Steep Section of pipeline

5.5 **SNH** advise that the proposal is unlikely to have a significant impact on the Kinlochhourn-Knoydart-Morar Wild Land Area although it states that further justification is required for the 15m wide construction corridor and the need for a welfare hut at the intake.

It states that "improvements sought to the proposed construction method, and quality of restoration will be critical. Reduction of the track post construction to max 2.5m wide is welcome."

"A number of trees are used by bats for roosting. Trees which have already been identified as bat roosts should be avoided. Disturbance of bats whilst occupying a roost is an offence but this can be avoided by timing the works outside the bat roosting season, or maintaining a 30m buffer from known roosts. If this is not possible a derogation licence will be required (from SNH) to prevent an offence being committed."

"The ecology report and supporting information states that the pipeline route will be adjusted to minimise impacts on most important habitats within the butterfly reserve. The applicant has not supplied survey information to highlight which are the important areas to be avoided."

5.6 **Lochaber District Fishery Board** following discussion with SEPA, is content with the proposed outflow location.

5.7 **THC Forestry Officer** has no objection subject to conditions requiring tree protection measures, a suitably qualified Arboricultural consultant to supervise construction works within the woodland, and further details of compensatory planting and areas to be fenced to allow natural regeneration.

5.8 **Historic Environment Team**: A walkover survey was undertaken and this identified 4 sites of interest, however these are all on the west side of the Allt Mhuic, and would not be affected by the development.

6. DEVELOPMENT PLAN POLICY

The following policies are relevant to the assessment of the application

6.1 Highland Wide Local Development Plan 2012

28 - Sustainable Design

29 - Design Quality & Place-making

30 - Physical Constraints

43 - Tourism

51 - Trees and Development

52 - Principle of Development in Woodland

55 - Peat and Soils

56 - Travel

57 - Natural, Built & Cultural Heritage

58 - Protected Species

59 - Other important Species

60 - Other Importance Habitats

61 - Landscape

63 - Water Environment

64 - Flood Risk

67 - Renewable Energy Developments

69 - Electricity Transmission Infrastructure

77 - Public Access

6.2 West Highland and Islands Local Plan 2010 (as continued in force)

No relevant policy

6.3 West Highland and Islands Local Development Plan

No relevant policy

6.4 **Highland Council Supplementary Planning Policy Guidance**

Construction Environmental Management Process for Large Scale Projects (August 2010)

Flood Risk & Drainage Impact Assessment (Jan 2013)

Green Networks (Jan 2013)

Highland Historic Environment Strategy (Jan 2013)

Highland's Statutorily Protected Species (March 2013)

Highland Renewable Energy Strategy & Planning Guidelines (May 2006)

Physical Constraints (March 2013)

Sustainable Design Guide (Jan 2013)

Trees, Woodlands and Development (Jan 2013)

Highland Biodiversity Action Plan 2015-2020

7. OTHER MATERIAL POLICY CONSIDERATIONS

7.1 **National Planning Framework 3 (NPF 3)**

Support for renewable energy developments towards a 'low carbon place'

Seek to respect, enhance and make responsible use of our natural and cultural assets towards a 'natural, resilient place'.

7.2 **Scottish Planning Policy (SPP)**

SPP sets out a presumption in favour of development that contributes to sustainable development and aims to direct the right development to the right place. Key subject policies with respect to this development are Delivering Heat and Electricity and Valuing the Natural Environment.

Para 154. The planning system should:

- support the transformational change to a low carbon economy, consistent with national objectives and targets, including deriving:
  - 30% of overall energy demand from renewable sources by 2020;
  - 11% of heat demand from renewable sources by 2020; and
  - the equivalent of 100% of electricity demand from renewable sources by 2020;
- support the development of a diverse range of electricity generation from renewable energy technologies – including the expansion of renewable energy generation capacity – and the development of heat networks;
- guide development to appropriate locations and advise on the issues that will be taken into account when specific proposals are being assessed;

Para 169 (Renewable electricity generating technologies). Considerations will vary relative to the scale of the proposal and area characteristics but are likely to include:

- net economic impact, including local and community socio-economic benefits such as employment, associated business and supply chain opportunities;
- the scale of contribution to renewable energy generation targets;
- effect on greenhouse gas emissions;
- cumulative impacts - planning authorities should be clear about likely cumulative impacts arising from all of the considerations below, recognising that in some areas the cumulative impact of existing and consented energy development may limit the capacity for further development;
- impacts on communities and individual dwellings, including visual impact, residential amenity, noise and shadow flicker;
- landscape and visual impacts, including effects on wild land;
- effects on the natural heritage, including birds;
- impacts on carbon rich soils, using the carbon calculator;
- public access, including impact on long distance walking and cycling routes and scenic routes identified in the NPF;
- impacts on the historic environment, including scheduled monuments, listed buildings and their settings;
- impacts on tourism and recreation;
- impacts on aviation and defence interests and seismological recording;
- impacts on telecommunications and broadcasting installations, particularly ensuring that transmission links are not compromised;
- impacts on road traffic;
- impacts on adjacent trunk roads;
- effects on hydrology, the water environment and flood risk;
- the need for conditions relating to the decommissioning of developments, including ancillary infrastructure, and site restoration;
- opportunities for energy storage; and
- the need for a robust planning obligation to ensure that operators achieve site restoration.

Para 200. Wild land character is displayed in some of Scotland's remoter upland, mountain and coastal areas, which are very sensitive to any form of intrusive human activity and have little or no capacity to accept new development.

Para 202. The siting and design of development should take account of local landscape character. Development management decisions should take account of potential effects on landscapes and the natural and water environment, including cumulative effects. Developers should seek to minimise adverse impacts through careful planning and design, considering the services that the natural environment is providing and maximising the potential for enhancement.

Para 203. Planning permission should be refused where the nature or scale of proposed development would have an unacceptable impact on the natural environment. Direct or indirect effects on statutorily protected sites will be an important consideration, but designation does not impose an automatic prohibition on development.

Para 204. Planning authorities should apply the precautionary principle where the impacts of a proposed development on nationally or internationally significant landscape or natural heritage resources are uncertain but there is sound evidence indicating that significant irreversible damage could occur. The precautionary principle should not be used to impede development without justification. If there is any likelihood that significant irreversible damage could occur, modifications to the proposal to eliminate the risk of such damage should be considered. If there is uncertainty, the potential for research, surveys or assessments to remove or reduce uncertainty should be considered.

Para 215. In areas of wild land (see paragraph 200), development may be appropriate in some circumstances. Further consideration will be required to demonstrate that any significant effects on the qualities of these areas can be substantially overcome by siting, design or other mitigation.

Para 216. Ancient semi-natural woodland is an irreplaceable resource and, along with other woodlands, hedgerows and individual trees, especially veteran trees of high nature conservation and landscape value, should be protected from adverse impacts resulting from development.

Para 217. Where appropriate, planning authorities should seek opportunities to create new woodland and plant native trees in association with development. If a development would result in the severing or impairment of connectivity between important woodland habitats, workable mitigation measures should be identified and implemented, preferably linked to a wider green network (see also the section on green infrastructure).

Para 218. The Scottish Government's Control of Woodland Removal Policy includes a presumption in favour of protecting woodland. Removal should only be permitted where it would achieve significant and clearly defined additional public benefits. Where woodland is removed in association with development, developers will generally be expected to provide compensatory planting. The criteria for determining the acceptability of woodland removal and further information on the implementation of the policy is explained in the Control of Woodland Removal Policy, and this should be taken into account when preparing development plans and determining planning applications.

7.3 Scottish Energy Strategy

The Scottish Energy Strategy, published in 2017, sets out the Scottish Government's vision on how Scotland's future energy production and use will help achieve the transition to a low carbon economy by 2050.

The Strategy recognises that the target for meeting 100% of our energy demand from renewables by 2020 is well on the way to being achieved. However, it advocates a refocus of thinking towards a whole system approach; not just considering electricity but looking at heat and transport also.

Consideration is given to the need to reduce energy demand, through for example adoption of energy efficiency measures, but also to the increasing upward trend in electricity consumption that seems likely to continue particularly when looking to

decarbonise transport, through replacement of fossil fuel engines with electric charging/battery storage.

The Strategy sets two new targets for the Scottish energy system by 2030:

- The equivalent of 50% of the energy for Scotland's heat, transport and electricity consumption to be supplied from renewable sources.
- An increase by 30% in the productivity of energy use across the Scottish economy.

The Strategy does not set out specific goals or targets for renewable electricity production deriving from hydro but it does state that a *diverse, well-balanced energy supply portfolio or 'energy mix' will remain essential as we continue to decarbonise our heat, transport and electricity systems – providing the basis for secure and affordable heat, mobility and power in future decades*.

8. PLANNING APPRAISAL

8.1 Section 25 of the Town and Country Planning (Scotland) Act 1997 requires planning applications to be determined in accordance with the development plan unless material considerations indicate otherwise.

Determining Issues

8.2 This means that the application requires to be assessed against all policies of the Development Plan relevant to the application, all national and local policy guidance and all other material considerations relevant to the application.

Planning Considerations

8.3 The key considerations in this case are:

a) compliance with the development plan and other planning policy
b) impact on trees and woodland
c) impact on protected species and other UK BAP species
d) impact on the water environment
e) impact on Wild Land Area and Landscape and visual impact including cumulative impacts
f) impact on amenity/noise/private water supplies
g) impact on historic assets
h) construction access and traffic
i) public access
j) any other material considerations.

Development plan/other planning policy

8.4 In line with Scottish Planning Policy, Policy 67 of the Highland-wide Local Development Plan sets out that renewable energy proposals should be well related to the source of the primary renewable resources that are need for their

operation and that the Council will consider:

- the contribution of the proposed development towards meeting renewable energy generation targets; and
- any positive or negative effects it is likely to have on the local and national economy.

8.5 Together with Policy 67, the proposal will be assessed against other policies of the development plan and Planning Guidelines and regard will be had to other material considerations, including proposals being able to demonstrate significant benefits including making effective use of existing and proposed infrastructure or facilities. Subject to balancing these considerations and taking into account any mitigation measures to be included, the Council will support proposals where it is satisfied that they are located, sited and designed such that they will not be significantly detrimental overall, either individually or cumulatively with other developments having regard in particular to any significant effects on the following:

- natural, built and cultural heritage features;
- species and habitats;
- visual impact and impact on the landscape character of the surrounding area (the design and location of the proposal should reflect the scale and character of the landscape and seek to minimise landscape and visual impact, subject to other considerations);
- amenity at sensitive locations, including residential properties, work places and recognised visitor sites;
- the safety and amenity of any regularly occupied buildings and the grounds that they occupy – having regard to visual intrusion or the likely effects of noise generation;
- ground water, surface water (including water supply), aquatic ecosystems and fisheries;
- safe use of airport, defence or emergency service operations;
- other communications installations or quality of radio or TV reception;
- the amenity of users of any Core Path or other established public access for walking, cycling or horse riding;
- tourism and recreation interests;
- land and water based traffic and transport interests.

8.6 The proposed hydro scheme will have a capacity of 900 to 950kW which is estimated to generate enough electricity for approximately 690 homes. This level of generation (over 100kW) is recognised by Scottish Government as making an important contribution to renewables targets. Subject to the proposal having no overall significant detrimental impacts on the following matters, the proposal would comply with the development plan.

Impact on trees and woodland

8.7 There is a strong presumption against development within woodlands where it affects important features such as Ancient Woodland or woodland that contributes to landscape designations, or nature conservation interests. This is such a woodland, as it is included in the Native Woodland Survey of Scotland, even if not

all of it falls within areas specifically mapped on the Ancient Woodland Inventory. Section 216 of SPP, reiterated in the Supplementary Guidance, states that ancient and semi natural woodland is an important and irreplaceable national resource that should be protected and enhanced, as should other native and long established woodlands with high nature conservation value.

8.8 Development proposals involving woodland removal will only be supported where they offer clear and significant public benefit. Public benefits include social, economic and environmental benefits, the latter including carbon considerations. A renewable energy project such as this can therefore represent a clearly defined public benefit in meeting the nation's wider obligations with respect to climate change but a balance needs to be achieved to ensure that government policy which seeks to promote renewables does not counteract government policy that seeks to protect woodland.

8.9 The first consideration is whether the proposal can be achieved without resorting to woodland removal. The developer did explore various options including a penstock route further to the east, out with the native woodland and butterfly reserve altogether, and with the powerhouse and outfall returning the water directly into Loch Arkaig. However this alternative was not acceptable to SEPA because there is a need for the water to be returned into the Allt Mhuic at a point upstream of where the substrate provides spawning habitat for fish.

8.10 Another two variations were considered by the applicant, one avoiding most of the native woodland and butterfly reserve but the penstock swinging back across the woodland to the powerhouse location on the Allt Mhuic as proposed, and another, taking a different line south of the forest track, further away from the river, before also returning to the proposed powerhouse location. These were considered less desirable because they would instead affect a number of very high quality veteran trees, bats, some important lichen, and more of the butterfly habitat, including monitoring transects, and these alternatives were ruled out by the developer for these reasons. The powerhouse cannot feasibly be moved further upstream because the levels would be no easier to work with from a construction point of view, and this would also reduce the hydraulic head. No better realistic alternative therefore exists for a scheme on this watercourse.

8.11 The Arboricultural Impact Assessment undertaken in December 2018 concludes that 63 trees would require to be removed in total, an area of 0.45Ha. Most of this loss would be in the area of the proposed powerhouse. This area is within Inventoried Woodland. The affected trees across the site as a whole comprise 4 groups of early mature silver birches, 3 of the groups being category B in quality and one group in category C. 9 further individual silver birches would be lost, all early mature, approx. 17-18m tall and category B trees. 1 or 2 mature oaks would be removed, 17m tall, both category A trees. One of the oaks, T50, is in a line of trees at the top of a bank where the penstock coincides with the path round the butterfly reserve. The other affected oak, TO51 is next to it, and it is proposed to significantly lop this tree in order to compensate for much of its root plate being within the construction corridor; however it is anticipated the remainder of the tree is likely to survive. The majority of trees within the footprint of the powerhouse are birches (category B), with one multi stemmed alder also to be lost (category B). Several silver birches, 12-18m tall, early mature to mature trees, all category

B, would be lost from the route of the access track to the powerhouse. The amended plans submitted in Dec 2018 re-route this track slightly to avoid a large rowan T20 (category B).

8.12 The trees that would potentially be affected in providing the enlarged access into the car park and increased visibility splays, required by the Transport Planning Team, were not included in the Arboricultural report. Further work has shown that it would be possible to lay a temporary surface of hardcore over a heavy duty geotextile over the affected area, which would be taken up again post construction. The tree nearest to the corner (probably an alder) would be unlikely to be adversely affected.

8.13 The powerhouse is to be cut into rising ground. The angle of the building will minimise the excavation works to an extent, however the eastern corner of the building around the transformer compound will see the greatest area of cut, resulting in a corner retaining wall of up to 4 metres in height. As well as the direct loss of trees on the site of the powerhouse, the cut into the embankment will impact on surrounding trees. A proposal to use piling to retain the bank whilst the concrete retaining walls are constructed would depend on the results of ground investigations. If feasible, this would help mitigate the impact.

8.14 A small number of riparian trees that are out with the area listed on the AWI, and not included in the Arboricultural Report, would also be lost from the area of the intake.

8.15 During the course of the application there has been dialogue with the Council's Forestry Officer and the applicant's arboriculturalist and agent with respect to the impact on woodland and individual trees, compensatory planting proposals and alternatives.

8.16 It is accepted that all feasible alternative routes have been explored for a scheme on this river and that for the proposed scheme the amount of tree loss has been minimised as far as possible. The proposal for a fenced construction corridor through the woodland, and the measures set out in the Tree Protection Plans go as far as can reasonably be expected.

8.17 Accepting that there is a public benefit associated with the provision of a hydro scheme in accordance with the Government's Control of Woodland Policy, the Forestry Officer has no objection to the proposal, subject to conditions requiring compliance with the Tree Protection Plan, arboricultural on-site supervision, and compensatory planting.

8.18 Significant additional compensatory tree planting with a total of 126 trees is proposed between the Reserve footpath and powerhouse, and between the forestry track and the deer fence, representing a re-planting ratio of 2 to 1. The lower area would comprise 680m² and the upper area 2100m². This would be fenced to allow natural regeneration to become established and augmented with tree planting. This would promote regeneration of this woodland, which is currently grazed by cattle in the winter specifically to suppress regeneration and maintain open glades for the benefit of the butterflies.

Impact on Protected and UK Biodiversity Action Plan Species

8.19 Part of the site is owned by Forestry Commission Scotland and primarily managed for its population of Chequered Skipper and Pearl Bordered Fritillary butterflies (reserve established in 2003). Chequered Skipper is protected under the Nature Conservation Act in Scotland. This places a duty on public bodies and office holders, in exercising any functions, to further the conservation of biodiversity so far as is consistent with the proper exercise of these functions. Pearl Bordered Fritillaries are on the Scottish Biodiversity List. Both butterflies are priority species listed in the UK and Highland Biodiversity Action Plans. Policies 58, 59 and 60 of the development plan presume against development that is likely to have an adverse impact, individually or cumulatively on protected species and their habitats.

8.20 The Chequered Skipper's distribution is confined to the NW of Scotland, and focussed in 10 core areas in Lochaber and North Argyll. Their favoured habitat is south facing sheltered woodland edges. Such open native woodland glades provide the shelter for them to complete their life cycle from eggs to larva, to pupa, to butterflies. Purple moor grass is a primary food source for the Chequered Skipper.

8.21 Pearl bordered fritillary butterflies exist in scattered isolated colonies throughout England and Central Scotland. They are at the edge of their range in Lochaber. They have similar habitat requirements to the Chequered Skipper, and their primary food is the dog violet.

8.22 From information provided there appears to have been significant discussions with the Forestry Commission Scotland (site owner) in relation to the potential impact on the butterflies/habitat in advance of the planning application being submitted, with FCS requiring sign off of the detailed proposals before submission. These discussions included representatives of Butterfly Conservation Scotland and Forest Research.

8.23 There has been a research programme at the reserve for approx. 17 years to assess the success of management regimes which sought to maintain the quality of existing habitat for butterflies and expand the area of butterfly habitat; and provide recommendations on cattle grazing on the site and for other conservation schemes. It is understood that in 2017 it was considered to be ideal for the research to continue for a further five years of research has been available, therefore the research period will be reduced by 1 to 2 years, depending on timing of construction.

8.24 It is understood that to offset this loss of monitoring and protect butterflies and habitats that Forestry Commission Scotland have required binding commitments from the developer including – penalty clauses to ensure a tight working corridor provision is adhered to, and fencing of this working corridor; lodging of restoration bond in advance of works; financially support further research; provide compensatory habitat extension; and agree contractor selection with FCS to ensure suitable environmental credentials.

8.25 The proposed development would have impact on the open glades, which are important for the butterflies. In seeking to avoid trees the proposed development would affect the glades instead. It is considered that in affecting the glades the proposed development would impact on the wood pasture habitat as a whole, in that the more open areas are integral to the habitat patchwork or mosaic that is important to the retention of these butterflies in this area.

8.26 The proposed compensatory tree planting would assist in the regeneration of the native woodland, however it is the delicate balance of both tree canopy and open glade that is peculiar to these butterflies habitat requirements. This balance is currently being maintained by active management of the reserve with overwintering cattle. Conversely, this cattle grazing restricts the natural regeneration of the ancient woodland areas.

8.27 Impact Appraisals have been submitted to support the application which concludes the reserve site is important for butterflies, and the development would have direct loss of habitat during construction. This is considered to have a moderate to major impact on these butterflies the loss of up to 2.5% of vegetation within the reserve required for breeding, nursery and foraging habitat, and disturbance within the construction corridor. It is however acknowledged that 90% of this 2.5% habitat loss will be reinstated

8.28 The Appraisals consider that the predicted impact can be reduced to minor/moderate in the short term, and minor in longer term, through mitigation. This would include the following measures: avoiding higher value habitats where possible; keeping the above ground infrastructure to a minimum; restoration with stored soils and turves replaced as close as possible to their original position; the timing of works to allow restored soils and vegetation maximum growing time to regenerate; the preservation of Ground Water Dependent Terrestrial Ecosystems (GWDTEs); no new artificial drainage; and, if, as a last resort, works are to progress during the butterflies larval stage (Late Sept – Oct), a walkover survey to be carried out to move larvae out of the way of the works, and tree felling to especially avoid the edges of woodland. A 5 year aftercare programme is also recommended to manage natural regeneration i.e. ensure unwanted species, which may out-compete target vegetation, does not become established, and apply locally harvested brash/hay mix in order to introduce appropriate seed stocks.

8.29 Other protected species were surveyed within 30m of the construction corridor, including:

- Otter – no holts or resting places found, though likely to be present – Loch Arkaig itself is likely to be a better food source
- pine marten – active in the area - no dens or resting places found
- bats – (survey extended only 5m either side of proposed pipe route) – 3 mature oak trees with confirmed bat roosts: 1 of which would definitely be lost, 1 would need to have branches lopped as a minimum, and one may be able to be avoided. A derogation licence from SNH would therefore be required.

- Badgers – suitable habitat though no evidence found
- red squirrels – suitable habitat though no evidence found
- water voles – no evidence found although the habitat around parts of the upper end of the scheme are suitable
- wildcat – suitable habitat though no evidence found
- Scottish wood ants – 4 anthills found within the survey area - locations not specified, though thought not to be within the construction corridor – require to be marked off and avoided or moved; mitigation required
- Golden eagle – a pair are known to nest just over 1km from the site; mitigation would be required to ensure no blasting or rock hammering between 1 Sept and 31 Dec, and any lighting minimised during the breeding season
- Osprey and sea eagle – within territories of these birds but unlikely to affect them
- Black grouse – disturbance to be avoided during the breeding/lekking season
- Other birds – timing restrictions required to avoid bird breeding season (Apr – end Aug)
- Fish – no in river working between 1st October – 31 May
- Lichen – very high quality assemblage within the woodland, including 2 species of national importance and one of international importance; plus one species appears to be an undescribed species (ie. New to science) – recorded on 2 trees near the construction corridor – construction impact would be significant without mitigation: - transplantation is not suitable mitigation, however experimental transplantation by an experienced lichenologist is recommended should any trees with notable species of high conservation value have to be felled. Felled trees should be left as large diameter lengths of deadwood to provide habitat for lichen as well as fungi and invertebrates
- Bryophytes – two stands of an oceanic indicator species were found on oak trees on the edge of the ravine; a number of patches of the nationally scarce liverwort were also found on birch trees on both sides of the Allt Mhuic – 1 is within the proposed construction corridor – its loss would not be critical and removal of the resultant log may well preserve it

8.30 Pre-commencement surveys for bats, pine marten, otters and raptors would be required. Vegetation clearance should be carried out outwith the bird breeding season April – July, otherwise it would need prior checking by an ecologist, and noisy construction activities would need to be avoided during the proposed construction period in the late autumn/winter. Conditions are proposed to secure these requirements.

Impact on the water environment

8.31 The plans were amended to address objections initially raised by SEPA with

respect to a number of issues, including the need to maintain a minimum 10m buffer to the watercourse. This is to ensure bank stability and avoid sediment polluting the watercourse during construction. In particular the uppermost section of the penstock would run alongside the burn at, or just beyond this limit for approx. 450m. Further details of materials handling and pollution prevention measures were also submitted. These issues may be controlled by SEPA under the CAR Site Construction licence, as well as via planning conditions. The timing of in-river working would be controlled by SEPA under CAR. The services of an Ecological Clerk of Works would be engaged, and a planning condition could ensure the frequency of their presence on site and to ensure that they submit regular monitoring and progress reports to the Planning Authority as well as to the developer.

8.32 It would be possible to recommend planning conditions to secure micro-siting of the penstock and borrow pits to avoid M25/Ground Water Dependent Terrestrial Ecosystems and to secure the final restored profiles of the borrow pits. Conditions could also ensure the installation of a hydrological barrier around the powerhouse, and the use of permeable materials for the permanent access to the powerhouse and hard standing to provide some mitigation.

Impact on Wild Land Area and Landscape and Visual Impact

8.33 The application is supported by a Landscape and Visual Impact Assessment (LVIA) which incorporates an assessment of the impact on Wild Land. The LVIA describes Allt Mhuic as a spectacular deep glen that cuts through high hills that strongly influence visibility, whilst woodland and occasional trees define the location of the glen in the wider landscape. The southern part of the Allt Mhuic is wooded, forming a high degree of enclosure. The human influence of land management is more perceptible in the southern part of the study area, where artificial blocks of plantation managed for commercial forestry influence views. The upper reach of the Mhuic has a more simple landscape character, enclosed by open high hills, channelling distant views and creating a sense of prospect towards distant rugged mountains and sanctuary within the glen. The landscape in the north part of the site has a stronger sense of remoteness where human influences are not evident and accessibility across the glen is restricted.

Wild Land Areas

8.34 The Kinlochhourn Knoydart Morar Wild Land Area starts approx. 876m up slope from the site of the proposed powerhouse, at the deer fence, above the Butterfly Reserve. The WLA covers the slopes either side of Loch Arkaig and around the head of the loch, together with an extensive area measuring 1065km² across Lochalsh and Lochaber. The intake and upper part of the penstock and track would all be within the WLA.

8.35 Wild Land Areas were formally identified and recognised in SPP in 2014, which is after some of the previous hydro schemes nearby were considered.

8.36 The key attributes of the WLA are

1. the high, remote, rugged, rocky mountains which provide a strong sense of naturalness and awe.

2. a remote interior with a notable absence of vehicle tracks and a sense of sanctuary; and
3. spectacular deep glens and lochs which influence visibility, remoteness and access through the landscape.

8.37 The LVIA considers the effects on these Wild Land Area attributes in turn and states:

1. The proposals are located on the lower part of the glen at some distance from the massive peaks. The intake would be viewed against a backdrop and would be of such a small scale that would not be perceptible in long distance views at this distance. The access track will be seeded to minimise possible visual intrusion from a distance.
2. The proposals are located some distance from the remote interior. The access track will be seeded to minimise possible visual intrusion from a distance and be an obvious aid to access.
3. Due to the winding nature of the Allt Mhuic burn and small scale nature of the proposals, combined with presence of localised trees, the visual intrusion of the intake and bridge will be very limited on the surrounding landscape. The proposed track will be grass seeded and will in time integrate and visually blend with the surroundings and localised clumps of trees are proposed near the intake and bridge crossing softening proposals and maintaining the sense of remoteness in the glen.

8.38 In summary, the LVIA states the proposals are assessed as having no greater than a moderate effect on one of the WWLA special qualities in the short term and negligible or no effect on the other WLA qualities.. Access improvements are limited to a very small part of the WLA and mitigation comprising seeding of the stone track and localised native tree planting will ensure that effects on the wild land qualities are minimised in the long term. The visual influence of the new intake and bridge is very limited given the alignment of the burn limiting the extent of views and very small scale of the proposals from more distant elevated locations.

8.39 With respect to the Wild Land, Scottish Natural Heritage does not object to the proposal and considers the proposal is unlikely to have a significant impact on the WLA. It advised that there are aspects of construction that could be improved to minimise impact on the WLA and sought further justification for the 15m construction corridor and the need for a welfare hut at the intake. The applicant was asked to consider restoring the track down post construction to a narrower track suitable for an argo only, however they state that it is essential to have 4x4 access to the intake for future maintenance purposes and health and safety of personnel. The applicant has however agreed to reduce to the track to 2m wide (2.5m on corners), and the creation of a green strip down the centre of the track to assist in mitigating the track's appearance. The welfare hut at the intake, in addition to one at the main site compound, is stated to be necessary to meet health and safety requirements during construction. This would be a temporary feature for the construction period.

8.40 The sense of naturalness is sensitive to any new built features that would be prominent on elevated slopes. Also, the retention of a permanent track to the

intake will introduce a manmade feature which will diminish the sense of remoteness and sense of sanctuary. However, taking into account the response from SNH, the scale of the development and its containment within a focused part of the area, the public benefit associated with renewable energy and the additional mitigation measures, it is considered there will be an impact on Wild Land, however not to a level significant enough to undermine the key attributes.

Landscape Impact

8.41 The landscape character type (LCT) most affected is described as “smooth moorland ridges” in the Lochaber Landscape Character Assessment, with the topmost section extending into “rugged massif”.

8.42 The Smooth Moorland Ridges are undulating hills with smooth elongated ridge profiles, more undulating in transitional areas such as this. This LCT provides a simple large scale landscape pattern dictated by uniform land cover and uncomplicated land form. Broadleaved woods and some conifer plantations on lower slopes and along loch edges. This LCT is sensitive to the development of infrastructure, such as roads or powerlines, which are least obtrusive when kept to glens or natural indentations in the landform.

8.43 The Rugged Massif Landscape Character Type comprises large rocky masses drawing the eye up towards ice scoured rounded summits, it is often a transitional landscape, it is remote, unsettled and inaccessible which accentuates the wild character of these areas, there is birch scrub and some oak woodland on lower slopes and within burn gullies, and some plantation forestry on flatter, lower slopes. This Landscape Character type is sensitive to impacts from tourist related developments and the upgrading of infrastructure.

8.44 The LVIA concludes that during construction there would be moderate–major effects on landscape features, moderate-major effects on visual-perceptual qualities, moderate effects on value (landscape designations and scenic quality and recreational and amenity value), and major-moderate effects on site and landscape character:

Landform – Moderate-major adverse effect during construction decreasing to moderate adverse after 5 years

Land cover – Moderate adverse effect during construction decreasing to minor adverse after 5 years

Tranquillity/remoteness – Major-moderate adverse effect during construction reducing to minor adverse after 5 years

Landscape character – major-moderate adverse effect reducing to moderate adverse after 5 years

The LVIA concludes “No important levels of effect are predicted beyond the construction phase on the landscape character overall beyond the site and immediate context. Careful siting of the structures and built elements, reinstatement of vegetation, localised native tree planting and seeding of the proposed access track where located in open moorland areas will limit any adverse effects on the landscape character.”

Visual Impact

8.45 Zones of Theoretical Visibility (ZTVs) were produced for a study area with a radius of 4km from the proposed development. This shows that it is likely that parts or all of the elements of the proposals would be visible from the following locations:

- some limited parts of the reserve, in particular the new access to the power house and working corridor for the penstock on the west bank during the construction phase
- from within the more open parts of the Allt Mhuic glen, and
- open moorland within the ZTV and within 2km of the proposals.

Screening would be provided by the woodland in the base of the glen, and landform of the steep sided glen and localised variations in the moorland landform.

8.46 Seven representative viewpoints were selected:

- the public road between Ardechive and Allt Mhuic
- the reserve entrance
- **the west bank of the reserve south of the forest track**
- the east bank of the Allt Mhuic near the proposed intake
- **the east bank of the Allt Mhuic**
- the west bank of the Allt Mhuic
- Beinn Chraoibh – to the north of the site

In summary, two viewpoints (**in bold**) were assessed as experiencing important levels of effect during the construction phase.

West bank south of the forestry track on the butterfly trail – major-moderate adverse effect during construction reducing to minor adverse after 5 years.

East bank – butterfly trail – major-moderate adverse effect during construction reducing to moderate adverse effect after 5 years.

No viewpoints are predicted to experience important levels of effect at year 1 or year 5.

8.47 Visitors to the nature reserve would generally keep to the car park access and main paths through the reserve. However these visitors would be affected during construction, and the nature of their visit and interest would mean they are particularly sensitive to the visual impacts of development.

8.48 The powerhouse is a significant feature of the proposal, it would have an industrial appearance, particularly with the transformer compound alongside and permanent access track and hard standing. Its siting on a steep part of the riverbank, which will necessitate significant engineering works close to the car park and entrance into the reserve, would detract from the character and quality of visitors' experiences of the reserve. The amended details submitted Dec 2018 propose additional tree planting between the path leading up through the butterfly reserve from the car park and the powerhouse. This would mitigate this impact in time.

8.49 The reserve is popular with visitors and it is a destination to which tourists are directed and taken by tourism providers. It is concluded that the visual impact of the powerhouse and tailrace, the access track to the powerhouse, and the lower part of the penstock route would detract from visitors experiences of the butterfly reserve. This impact will be highest during construction and will diminish significantly post construction, and further reduce as the disturbed area re-vegetate and the compensatory tree planting establishes.

8.50 The proposed 4x4 track to the intake would extend almost a kilometre up the open hill beyond the existing forest track, behind the reserve. The extent of engineering work would be greatest where the penstock and track would cross an increasingly steep slope, which is the most remote part of the scheme. The construction corridor would be widest here and significant benching would be necessary. The cut would be over 4m deep in places and over 6m wide, with a steep embankment on the upslope side that would be stabilised with a geotextile membrane. In total the construction corridor from topside ditch to bottom-side ditch would be approx. 12m across. The upper Borrow Pit (BP2) would also be sited on the open hillside beyond the reserve. Although this would be a temporary feature that would be restored, significant engineering works would be involved and effective restoration will depend on exemplary materials handling and storage during construction, and the successful reinstatement of vegetation, which will take longer to re-establish in this part of the site, given the elevation.

8.51 The amended details submitted in Dec 2018 state that the route of the permanent access track between the deer fence and the steeper section where it enters Coire Mhuic, would be amended to be more sympathetic to existing undulating contours, and in order to break up the line of the track and limit areas of cut and fill in views. This micro siting is welcome, and will assist in reducing the visual impact of the track in the upper part of the site.

8.52 The Addendum to the LVIA concludes that the track would be visible from the path in the reserve as a broken, undulating line which would be screened in time as the compensatory tree planting matured. From higher ground to the north, including the upper slopes of Sgurr Choinich and Carn Dubh, the upper part of the track, including the bridge would be visible in the landscape.

8.53 There is little evidence of a walkers' path up Allt Mhuic beyond the forestry track, however the gate in the new deer fence has a padlock which makes access difficult. Complaints have been received by the Council's Access Officer about the locked gate (the old fence used to have a stile). Most people would however access Geal Charn via the Allt Dubh, to the east, and Sgurr Choinich would be most readily accessed via the west side of Allt Mhuic, and its southern ridge. From the summit of Beinn Bhan (771m), a Corbett south of Loch Arkaig, the track would be conspicuous, along with the tracks for several hydro schemes on the north side of the loch, however at this distance (+5km) the visual impact of this scheme would be diminished.

8.54 In summary, the visual impact of the upper part of the scheme would be relatively contained, given the steep sides to the glen, although the vehicular track would be prominent in views from the upper part of the reserve and from more distant views

from the hills to the north and south. Crucial to the integration of this proposal into the landscape is the careful construction and high quality restoration of the track. There will be an impact on the amenity of visitors to the butterfly reserve in the lower part of the scheme, however it is considered this will largely be a temporary impact, which can be mitigated.

8.55 While the construction phase is for a fairly short period (8 months), if the construction is not carried out in accordance with the principles, practices and mitigation set out in the Construction Management Statement, Schedule of Mitigation and supporting documents then the impacts could be greater than assessed and the restoration less effective. The developer/contractor must adhere to these principles, practices and commitments to ensure the highest quality of outcome on the ground. Conditions will require the appointment of an Ecological Clerk of Works (ECoW) and a Landscape Clerk of Works (LCoW) for the duration of the construction and restoration, and part of their role will be report direct to the Planning Authority to aid the independent monitoring of work on the site.

Cumulative Visual Impact

8.56 There are a total of 5 recent hydro schemes which have been constructed along the north side of Loch Arkaig, (Cia Aig, Allt Dubh, Ardechive (a micro hydro scheme), Allt Cheanna Mhuir, and Allt Arcabhi, plus the scheme on the River Arkaig at Achnacarry, plus another, Allt Chailleach, which is the subject of a current application, further to the west along the loch. There are also plans underway to increase the extent of the Arcabhi scheme by incorporating Loch Blair, beyond the existing intake (18/00054/SCRE).

8.57 The construction corridors for both Arcabhi and Cheanna Mhuir were restored down to argo tracks leading from the powerhouses to the intakes. These are narrow and given the more undulating terrain at these sites these tracks are not prominent in the landscape. Ardechive is a micro hydro, with minimal infrastructure visible in the landscape. Both Cia-Aig and Allt Dubh do have substantial tracks from the powerhouses to the intakes. These have both been subject to complaints regarding the landscape and visual impact of elements of these schemes. These are approx. 3.7km and 6km away respectively to the east. Whilst these two schemes would not be seen in conjunction with Allt Mhuic from close to the site, they would all be visible together from the summit Beinn Bhan, albeit at distance (+5km)

8.58 Visitors are likely to be aware of these hydro schemes sequentially as they drive down the glen. The powerhouses for Allt Dubh, Allt Cheanna Mhuir and Arcabhi are each close to the road. Cheanna Mhuir and Arcabhi are surrounded by woodland which limits views of these powerhouses considerably. The sequential cumulative effects experienced by road users are assessed to be minor, not significant, during construction and operation.

<u>Impact on Amenity/Noise</u>

8.59 There are no permanent residential properties close to the scheme. There is a static caravan on the loch side almost opposite the entrance to the butterfly

reserve car park. This is one of several caravan pitches along the loch shore. The caravan would be approx. 100m from the powerhouse and across the other side of the Allt Mhuic. At this distance, and with the intervening river, it is unlikely that the noise of the turbine would cause disturbance to the occupiers of the caravan. However as it is a caravan rather than a more substantial permanent structure, a planning condition to ensure the noise levels do not exceed acceptable levels would be recommended.

8.60 Disturbance from construction activities at the site, and due to construction traffic is an inevitable consequence of development and is temporary.

Impact on Private water supplies

8.61 Although not confirmed, the caravan on the loch shore is likely to take its water from the Allt Mhuic. The impact on private water supplies resulting from this development is however controlled by SEPA under the CAR licence.

Impact on Historic Assets

8.62 No features of interest within the proposed construction area. No mitigation is considered necessary.

Construction Access

8.63 Access for construction traffic would be taken from the A82 at the Commando Memorial, the B8004 to Gairlochy, the B8005 past Achnacarry and Clunes to the eastern end of Loch Arkaig at Cia-Aig, and then the C1153 which continues along the north shore of Loch Arkaig. A proportion of the construction traffic would access the site via the forest track and so avoid the last section of the minor road, and only the vehicles and machinery needed to construct the bottom part of the scheme would follow the minor road to the existing car park entrance into the reserve. It was intended that this scheme be constructed concurrently with another proposed hydro scheme at Allt Chailleach which is further west along Loch Arkaig, however this application has now been withdrawn following a recommendation to refuse planning permisison (18/03860/FUL).

8.64 The Construction Traffic Management Plan (which still includes joint arrangements with the Allt Chailleach scheme) concludes that traffic associated with construction will constitute a significant increase in the normal traffic along the C1153 and the forest track. The main impacts would be an increase in the risk of accidents, inconvenience to local road users, and disturbance due to noise, dust, and vibration to the properties very close to the roads at Gairlochy, Achnacarry, Bunarkaig, Clunes, Achnasaul and Ardechive.

8.65 The developer has proposed traffic management measures requiring articulated lorries to wait at a lay-by beyond the Commando Monument, just off the A82, and await instruction before proceeding along the single track roads to the site, to avoid meeting another large load on the road. Other traffic mitigations are proposed including signage, use of forestry road, speed limit and briefing of suppliers.

8.66 Following submission of Construction Traffic Management Plan and supporting information, together with video and photographic survey information, Transport Planning Team has removed its original objection (lack of information) and recommends conditions be attached to any permission requiring the Construction Traffic Management Plan to be enhanced with a suitable escort arrangement for large construction vehicles, together with further information on the detail of the construction management, the pre-start repair of a culvert, prevention of parking/loading/unloading on the public road, widening of the bellmouth at the entrance to the reserve, and formal wear tear agreement being in place before work commences.

8.67 A revised Construction Traffic Management Plan will be required by condition in order to take account of the withdrawal of the An Challeach scheme, and the additional requirements set out by the Transport Planning Team.

Public Access

8.68 Path closures would be required around the car park for the duration of the construction works. A temporary path would be provided through the bottom part of the wood. The part of the penstock route that coincides with the butterfly trail in the upper part of the wood up to the forestry track would need to be closed during pipe construction works (anticipated between Sept – Nov 2019). The butterfly trail on the west side of the Allt Mhuic would not be affected. The route up the east side of the upper part of the burn would require to be managed to ensure any walkers do not come into conflict with construction activities. This is not likely to be a significant number and could be readily managed by banksmen and signage. An Access Management Plan is to be secured by condition.

8.69 The Allt Mhuic is a recognised kayaking river, listed in guide books as having about 500m of grades 4 and 5 kayaking – which is towards the top end of grades for white water. The usual put-in location is just above the forestry track, and the get-out is above the powerhouse location. The proposed development would not affect the banks at these locations, and the riverbed itself would not be affected. Stiles or gates may need to be included in any areas that are to be fenced to allow woodland regeneration. Access could still be taken up the west side of the river when paths are closed temporarily in the lower part of the site. The diminution of flows may affect the number of days that this river is kayak-able. The agent has stated that the CAR licence would allow an abstraction rate of ≤ 0.5m^3/s whereas in spate there would be between 1.6 – 2.2m^3/s. He considers there would be sufficient flow remaining for kayakers, and that there may only be about 5 days in the year when this river has sufficient water for kayaking in any event. The impact of changes to river hydrology should be taken into account by SEPA as part of the CAR licence, however it is understood that the CAR licence was processed without SEPA being aware of the kayaking interest.

8.70 The Scottish Canoe Association is seeking to work with developers to secure live flow data and negotiate shut down days. This would be possible subject to voluntary agreement being reached between the kayakers and the developer – it would not be possible to devise a suitable and enforceable planning condition to secure such an ongoing commitment in the long term. This has been pursued

elsewhere through CAR licences. The applicant has indicated they would be agreeable to making live flow data available for this purpose, and a condition is proposed to secure implementation of access to this information (web-based flow data).

Non-material considerations

8.71 The issue of government subsidies driving such hydro proposals is not a material planning consideration. Neither is the issue of community benefit.

8.72 Similarly, whether alternative renewable technologies are considered to be less damaging to the environment is not for consideration as part of an individual planning application - this scheme is required to be considered on its planning merits.

9. CONCLUSION

9.1 The assessment of this application is a careful balance between National and local support for renewable energy and protection of important environmental resources. The greatest impact from the development will be from the construction phases, however there will be permanent features within the landscape.

9.2 Scottish Government recognises that schemes over 100kW make a positive contribution to meeting renewable energy targets. In accepting the positive contribution of the development in energy terms, and taking into account the mitigation measures included, it is considered, on balance, that the proposals will not have a significant detrimental effect in term of the considerations set out in Policy 67.

9.3 The application can be supported in the context of the Council's Development Plan and in particular Policy 67 Renewable Energy. All relevant matters have been taken into account when appraising this application. It is considered that the proposal accords with the principles and policies contained within the Development Plan and on balance is acceptable in terms of all other applicable material considerations.

10. IMPLICATIONS

10.1 Resource: Not applicable

10.2 Legal: Not applicable

10.3 Community (Equality, Poverty and Rural): Not applicable

10.4 Climate Change/Carbon Clever: Not applicable

10.5 Risk: Not applicable

10.6 Gaelic: Not applicable

11. RECOMMENDATION

It is recommended that planning permission be **GRANTED** subject to the following:

Conditions and Reasons

1. No development shall commence on site until a pre-commencement meeting is held on site between the Developer, the Contractor, the Ecological Clerk of Works, the Landscape Clerk of Works, Scottish Natural Heritage and the Scottish Environment Protection Agency where appropriate. In advance of the meeting the developer's representatives shall provide an updated programme of works and ensure the route of the construction corridor has been clearly marked out on site and the necessary pre-commencement surveys have been carried out. The development shall not commence until written agreement has been received from the Planning Authority that the construction corridor route and marking is acceptable and the necessary surveys undertaken and any additional mitigation captured within the Construction Management Plan required under Condition 2.

   Reason: To ensure the development is implemented in accordance with the provisions of the application and associated supporting documents.

2. No development shall commence on site until an updated Construction Method Statement has been submitted to, and approved in writing by, the Planning Authority. The updated documents shall include the following:

   a) An updated Schedule of Mitigation (SM) drawing together all approved mitigation in support of the application and other mitigation (including that required by agencies and relevant planning conditions attached to this permission), including the specific requirements in relation to impacts on the water environments and pollution prevention as set out in SEPA letter dated 3.10.18.

   b) Details of the roles and responsibilities of the appointed Environmental Clerk of Works (ECoW), Landscape Clerk of Works (LCoW), and Arboriculturalist including frequency of monitoring and any specific accountability. These responsibilities shall include the submission of weekly update reports direct to the Planning Authority and notification direct to the Planning Authority of any environmental or mitigation breaches;

   c) A statement of responsibility to 'stop the job/activity' if a breach or potential breach of mitigation or legislation occurs;

   d) Methods for monitoring, auditing, reporting and the communication of environmental management on site and with the client, Planning Authority and other relevant parties. This shall include monthly project update reports sent direct to the Planning Authority and notification of Planning Authority included within the emergency notification plan.

   e) Construction Programme to be updated.

   Thereafter, the development shall be carried out in accordance with the approved Construction Method Statement and associated Schedule of Mitigation.

Reason: To protect the landscape, environment and wildlife interests from the construction and operation of the development and secure final detailed information on the delivery of all mitigation proposed in this application.

3. No development shall commence until the Construction Traffic Management Plan has been updated to incorporate the requirements set out in the response from the Council's Transport Planning Team dated 12 October 2018. Thereafter the development shall be undertaken in accordance with the approved Construction Traffic Management Plan unless prior agreement is reached with the Planning Authority.

   Reason: In the interest road safety, to minimise disruption on the public road network.

4. No development shall commence until the borrow pits, construction compound and laydown areas have been mapped on the National Vegetation Classification drawing and submitted to, and approved in writing by, the Planning Authority. This shall confirm that areas of M25 habitat are avoided by these parts of the development. If any part of the access track is to cross this habitat then this must be a floating track. Thereafter the development shall be undertaken in accordance with the approved details.

   Reason: To protect ground water terrestrial dependent terrestrial ecosystems.

5. Prior to any site excavation or groundworks, all retained trees are to be protected against construction damage using protective barriers located beyond the Root Protection Area and as per the approved Tree Protection Plan. Barriers are to remain in place throughout the construction period and must not be moved or removed without the prior written approval of the Planning Authority.

   Reason: To ensure the protection of retained trees throughout the construction period.

6. A suitably qualified Arboricultural consultant must be employed to ensure that the Approved Tree Protection Plans are implemented to the agreed standard. Stages requiring arboricultural supervision are to be set out in a revised arboricultural method statement for the written agreement of the planning authority and certificates of compliance for each stage are to be submitted for approval.

   Reason: To ensure the protection of retained trees throughout the construction period.

7. No development shall commence until a detailed scheme of Compensatory Planting/natural regeneration (including future maintenance) has been submitted and approved in writing by the planning authority. All planting shall be implemented in full no later than 1st April 2020 or prior to first commissioning of the hydroelectric scheme (whichever is first), or as otherwise agreed with the planning authority. The planting shall be maintained thereafter in accordance with the approved scheme, until established to the full satisfaction of the planning authority.

   Reason: To protect Scotland's woodland resource, in accordance with the Scottish

Government's policy on the Control of Woodland Removal.

8. No development shall commence until a plan for providing live web based flow data for the Allt Mhuic has been submitted to and approved in writing by the Planning Authority. Thereafter the approved flow data arrangements shall be implemented prior to initial operation of the approved hydro scheme and shall remain in place for the life of the hydro scheme, unless otherwise first agreed in writing by the Planning Authority.

Reason: In order to provide live flow data to inform recreational users of the Allt Mhuic, to off-set loss of canoeing/kayaking days.

9. No development shall commence on the construction of the powerhouse hereby approved until the final design of the powerhouse has been submitted to the Planning Authority, and the position of the powerhouse and been marked out on site and the position agreed by the Planning Authority. Thereafter the development shall be carried out in accordance with the approved details. For the avoidance of doubt, consideration shall be given to minimising the size of the powerhouse where possible and piling the retaining structure to the rear of the powerhouse to minimise disturbance and tree loss.

Reason: In the interests of tree and habitat protection and visual amenity in order to secure appropriate micro-siting of the powerhouse.

10. No development shall commence on site until the Access Management Plan has been updated to reflect the comments of the Council's Access Officer, and submitted to, and approved in writing by, the Planning Authority. Thereafter the development shall be undertaken in accordance with the approved Access Management Plan.

Reason: In order to safeguard public access both during and after the construction phase of the development.

11. Unless otherwise agreed in writing by the Planning Authority, in the event of the scheme not generating electricity for a continuous period of twelve months with no realistic expectation of resumption in the foreseeable future, the site shall be reinstated within a period of two years in accordance with the scheme to be submitted to, and approved in writing by, the Planning Authority, following the expiry of such a period of cessation or within such timescales as agreed in writing by the Planning Authority. Reinstatement shall include the removal of the above ground infrastructures and restoration of the ground and restoration of the natural water regime to normal flows, to the written satisfaction of the Planning Authority in consultation with SEPA and SNH.

Reason: To ensure that the site is reinstated to the satisfaction of the Planning Authority to remove any unnecessary structures from the landscape.

Signature:	David Mudie
Designation:	Area Planning Manager – South
Author:	Susan Macmillan
Background Papers:	Documents referred to in report and in case file.

Relevant Plans:

Plan 1 C067-101 Rev.C Location/Site Layout Plan - submitted 22.10.18
Plan 2 C067-102 Rev.B General Plan – Intake details submitted 5.7.18
Plan 3 C067-103.1 Rev.D Pipeline details 1 of 4 –– submitted 22.10.18
Plan 4 C067-103.1 Rev.C Pipeline details 1 of 4 with existing trees - submitted 19.12.18
Plan 5 C067-103.1 Rev.C Pipeline details 1 of 4 with RPAs – submitted 19.12.18
Plan 6 C067-103.2 Rev.B - Pipeline details 2 of 4 – submitted 19.12.18
Plan 7 C067-103.3 Rev.B - Pipeline Details 3 of 4 – submitted 5.7.18
Plan 8 C067-103.4 Rev.C - Pipeline details 4 of 4 – submitted 22.10.18
Plan 9 CO067-104.1 Turbine House details 1 of 2 – submitted 5.7.18
Plan 10 C067-104.2 Rev.B Turbine House details 2 of 2 – submitted 5.7.18
Plan 11 C067-105 Rev.B - Bridge & Pipe Crossing – submitted 5.7.18
Plan 12 C067 106 Rev.C – details of steep section of pipe route – submitted 22.10.18
Plan 13 C067-107 Rev.B - Peat depths and NVC – submitted 5.7.18
Plan 14 C067-109 - Access layout – submitted 22.10.19
Plan 15 C067-110 – Site Layout Plan – native woodland and replanting – submitted 19.12.18
Plan 16 C067-111 Site Layout Plan – alternative layouts considered – submitted 21.12.18
Plan 17 Penstock and NWSS re-plotted – submitted 4.2.19

Pipe crossing
NN 1267 9270

Intake
NN 1273 9276

Contractor's compound
for intake works

Bridge
NN 1265 9265

Site boundary
Area: 3.91 Ha

Quarry / borrow pit &
area for storage & burial
of surplus material (BP2)

Pipeline and new
permanent access track

Quarry / borrow pit (BP1)

Contractor's compound
and laydown area for
pipeline works

Pipeline

Grid connection
(alternative route)

Turbine house and Outfall
NN 1203 9123

Grid connection
(preferred route)

New permanent
access track to
turbine house

Contractor's compound
for turbine house works

Butterfly reserve
car park.

Existing quarry / borrow pit
(BP3)

Loch Arkaig

0 1000 m 1:10,000 at A3

1:100,000 at A3

glenhydro

Key

- Site boundary
- Pipeline
- New permanent access track
- Path
- Grid connection
- Civil structures
- Contractor's compounds
- Quarries / borrow pits
- 2A — Areas of detailed plans

Rev	Description	Dwn	Chk	Date
C	Lower compound amended	TC		28 Aug 18
B	Main compound amended	TC		20 Mar 18
A	Pipeline route amended	TC		8 Sep 17
	Original drawing	TC		12 Jul 17

Project
C067 - Allt Mhuic

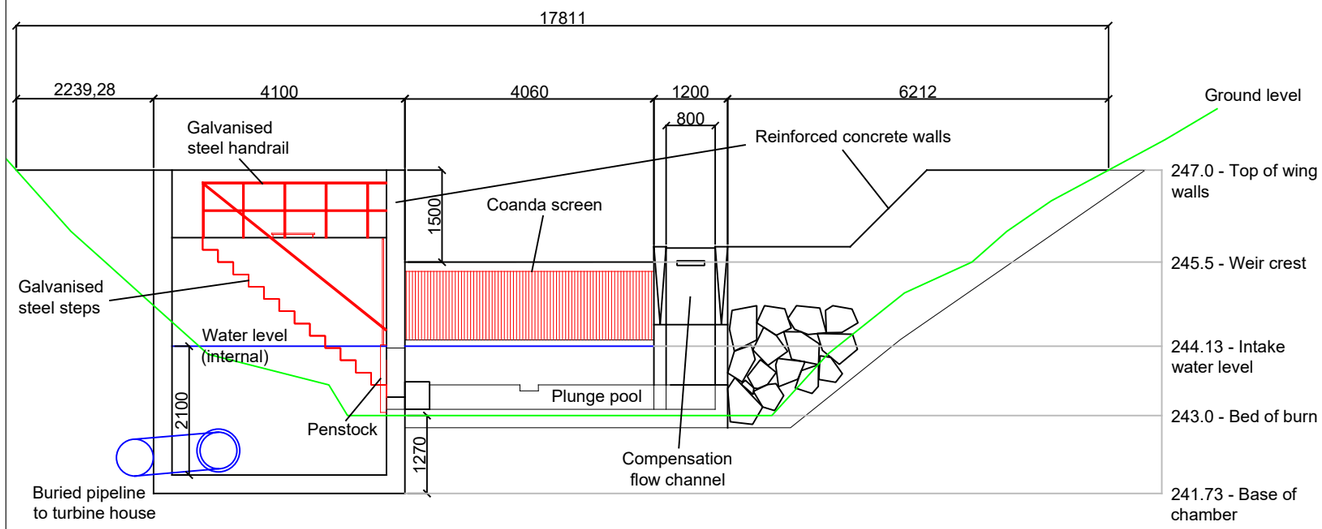
Drawing Title
Site Layout Plan

Scale
As indicated

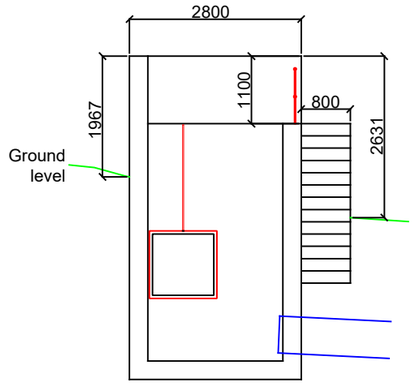
Drawing No.
C067-101

Rev
C

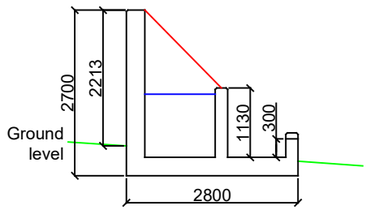
Glen Hydro Consulting
9 Reform Street
Blairgowrie
PH10 6BD
Tel. 01250 710656



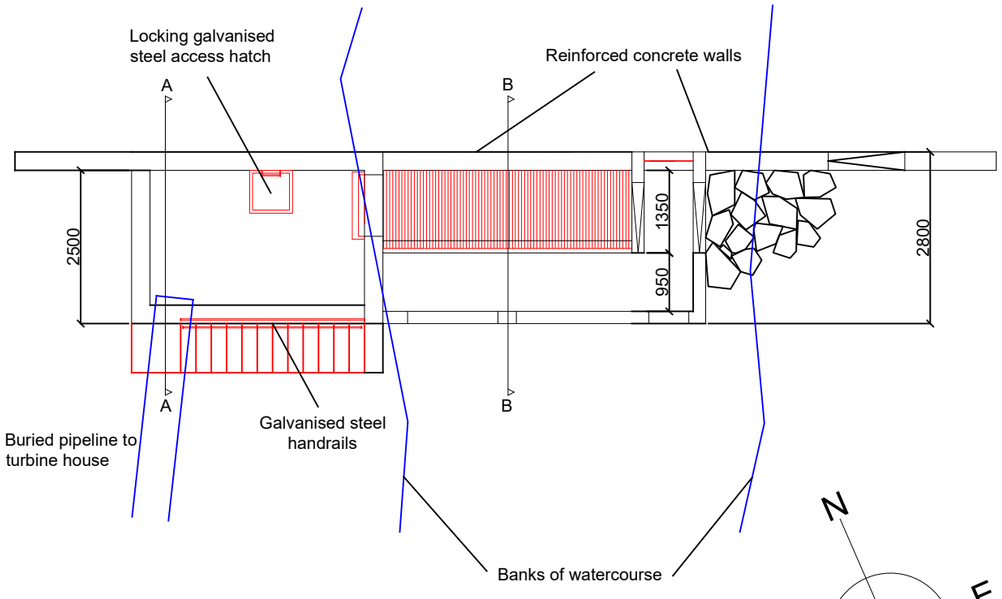
Intake elevation looking upstream



Intake section A - A



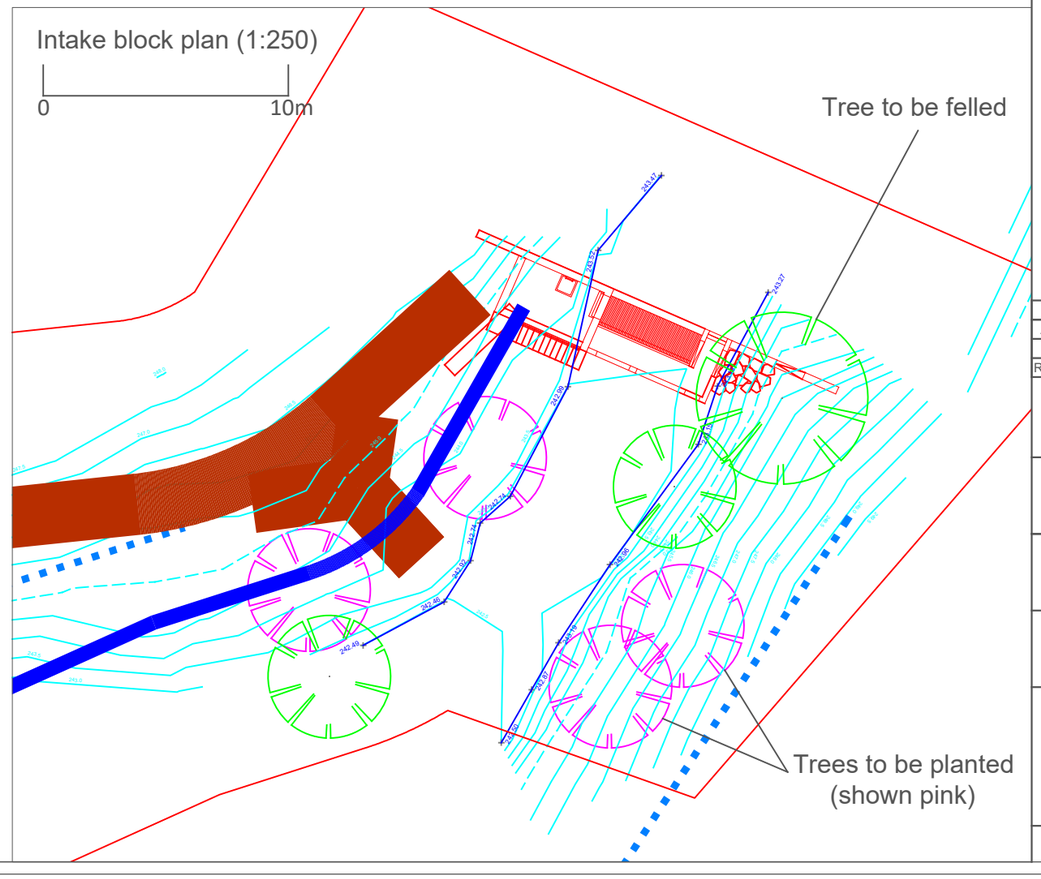
Intake section B - B



Intake plan

Scale 1:100

0mm 5000mm 10000mm



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Key

- Site boundary
- Pipeline
- New permanent access track
- Path
- Grid connection
- Civil structures
- 10m buffer from river

Rev	Description	Dwn	Chk	Date
B	Compounds amended	TC		20 Mar 18
A	Pipeline route amended	TC		8 Sep 17
	Original drawing	TC		12 Jul 17

Project
C067 - Allt Mhuic

Drawing Title
Intake details

Scale
As indicated

Drawing No.
C067-102

Rev
B

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1

2A

Nature Reserve

Muick

Car Park

Pipeline

Turbine house and Outfall

NN 1203 9123

Hydrological barrier

Silt fence

Parking/access areas around turbine house constructed from permeable materials

Hydrological barrier

Silt trap

Drain and silt fence

Grid connection (alternative route)

Grid connection (preferred route)

New permanent access track to turbine house

Contractor's compound for turbine house works

0 100 m

1:1,000 at A3

glenhydro™

Key

- Site boundary
- Pipeline
- New permanent access track
- Path
- Grid connection
- Civil structures
- Contractor's compounds
- Quarries / borrow pits
- 10m buffer from river
- Temporary drain for dirty water during construction
- Temporary drain for clean water during construction
- Permanent roadside ditch formed at end of construction
- Area of GWDTE

Rev	Description	Dwn	Chk	Date
D	Drainage added	TC		28 Aug 18
C	Compound amended	TC		28 Aug 18
B	Compounds amended	TC		20 Mar 18
A	Pipeline route amended	TC		8 Sep 17
	Original drawing	TC		12 Jul 17

Project: C067 - Allt Mhuic

Drawing Title: Pipeline details incl drainage 1 of 4

Scale: 1:1,000 at A3

Drawing No.: C067-103.1

Rev: D

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1

Nature Reserve

2A

Muick

Car Park

0

100 m

1:1,000 at A3

glenhydro™

Key

- Site boundary
- Pipeline
- New permanent access track
- Path
- Grid connection
- Civil structures
- Contractor's compounds
- Quarries / borrow pits
- Areas of replanting
- Existing tree canopies
- Trees to be felled or reduced

Rev	Description	Dwn	Chk	Date
C	Compound amended	TC		28 Aug 18
B	Compounds amended	TC		20 Mar 18
A	Pipeline route amended	TC		8 Sep 17
	Original drawing	TC		12 Jul 17

Project

C067 - Allt Mhuic

Drawing Title

Pipeline details 1 of 4 with existing trees & replanting

Scale

1:1,000 at A3

Drawing No.

C067-103.1

Rev

C

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1

Nature Reserve

2A

Muick

Car Park

0

100 m

1:1,000 at A3

glenhydro™

Key

- Site boundary
- Pipeline
- New permanent access track
- Path
- Grid connection
- Civil structures
- Contractor's compounds
- Quarries / borrow pits
- RPAs - trees to be retained
- RPAs - trees to be felled / reduced

Rev	Description	Dwn	Chk	Date
C	Compound amended	TC		28 Aug 18
B	Compounds amended	TC		20 Mar 18
A	Pipeline route amended	TC		8 Sep 17
	Original drawing	TC		12 Jul 17

Project

C067 - Allt Mhuic

Drawing Title

Pipeline details 1 of 4 with RPA

Scale

1:1,000 at A3

Drawing No.

C067-103.1

Rev

C

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Tel. 01250 710656

2A

2B

Waterfall

1

2B

3A

Quarry / borrow pit (BP1)

Contractor's compound and laydown area for pipeline works

2A

0

100 m

1:1,000 at A3

glenhydro™

Key

- Site boundary
- Pipeline
- New permanent access track
- Path
- Grid connection
- Civil structures
- Contractor's compounds
- Quarries / borrow pits
- RPAs - trees to be retained
- RPAs - trees to be felled / reduced

Rev	Description	Dwn	Chk	Date
B	Compounds amended	TC		20 Mar 18
A	Pipeline route amended	TC		8 Sep 17
	Original drawing	TC		12 Jul 17

Project

C067 - Allt Mhuic

Drawing Title

Pipeline details 2 of 4 with RPA

Scale

1:1,000 at A3

Drawing No.

C067-103.2

Rev

B

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Blairgowrie
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Tel. 01250 710656

3A

3B

3B

4A

2B

3A

Quarry / borrow pit & area for storage & burial of surplus material (BP2)

0

100 m

1:1,000 at A3

glenhydro™

Key

- Site boundary
- Pipeline
- New permanent access track
- Path
- Grid connection
- Civil structures
- 10m buffer from river

Rev	Description	Dwn	Chk	Date
B	Compounds amended	TC		20 Mar 18
A	Pipeline route amended	TC		8 Sep 17
	Original drawing	TC		12 Jul 17

Project

C067 - Allt Mhuic

Drawing Title

Pipeline details
3 of 4

Scale

1:1,000 at A3

Drawing No.

C067-103.3

Rev

B

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4A

4B

Silt trap
Cut-off drain
Drain and silt fence
Silt trap
Culvert for cut-off drain (and roadside ditch)
Cut-off drain
Silt trap
Drain and silt fence
Silt trap
Silt trap
Cut-off drain
Silt trap
Culvert for cut-off drain (and roadside ditch)
Drain and silt fence
Cut-off drain
Silt trap
3B

4B

3 - Intake parking
Culvert for cut-off drain (and roadside ditch)
Cut-off drain
Silt trap
Coffer dams
Drain and silt fence
Coffer dam
Piped diversion
Silt trap
Permanent ditch on uphill side of track
Cut-off drain
Silt trap
Drain and silt fence
Coffer dam
Silt trap
Piped diversion
Drain and silt fence
Silt trap
Cut-off drain
Silt trap
4A
Silt trap
Cut-off drain

4 - pipeline and track between intake and bridge
2 - Northern approach to Bridge
1 - Site compound

0
100 m
1:1,000 at A3

glenhydro

Key

- Site boundary
- Pipeline
- New permanent access track
- Path
- Grid connection
- Civil structures
- Contractor's compounds
- Quarries / borrow pits
- 10m buffer from river
- Temporary drain for dirty water during construction
- Temporary drain for clean water during construction
- Permanent roadside ditch formed at end of construction

Rev	Description	Dwn	Chk	Date
C	Drainage added	TC		24 Aug 18
B	Compounds amended	TC		20 Mar 18
A	Pipeline route amended	TC		8 Sep 17
	Original drawing	TC		12 Jul 17

Project
C067 - Allt Mhuic

Drawing Title
Pipeline details incl drainage
4 of 4

Scale
1:1,000 at A3

Drawing No.
C067-103.4

Rev
C

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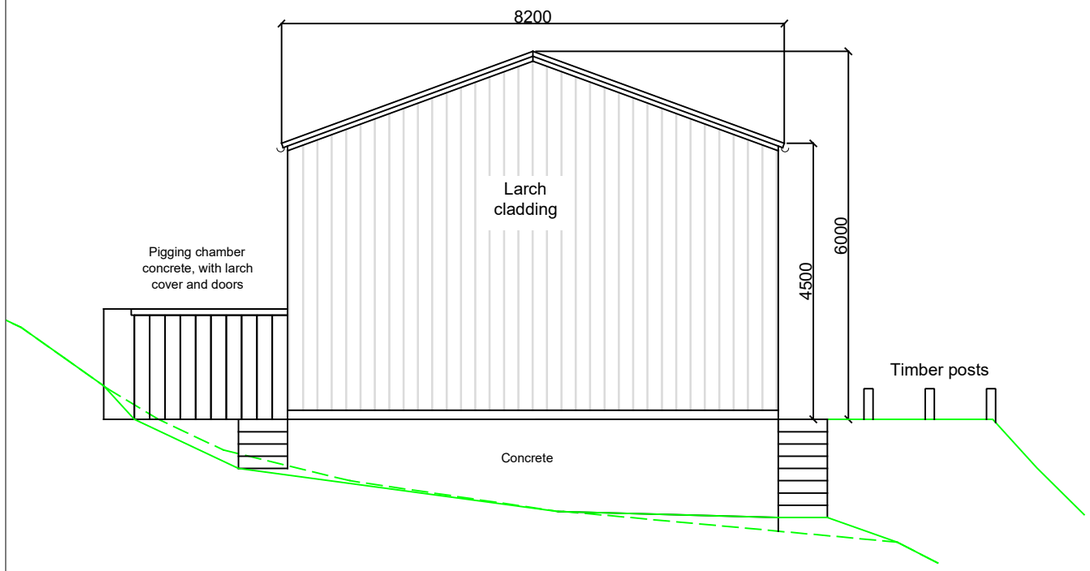
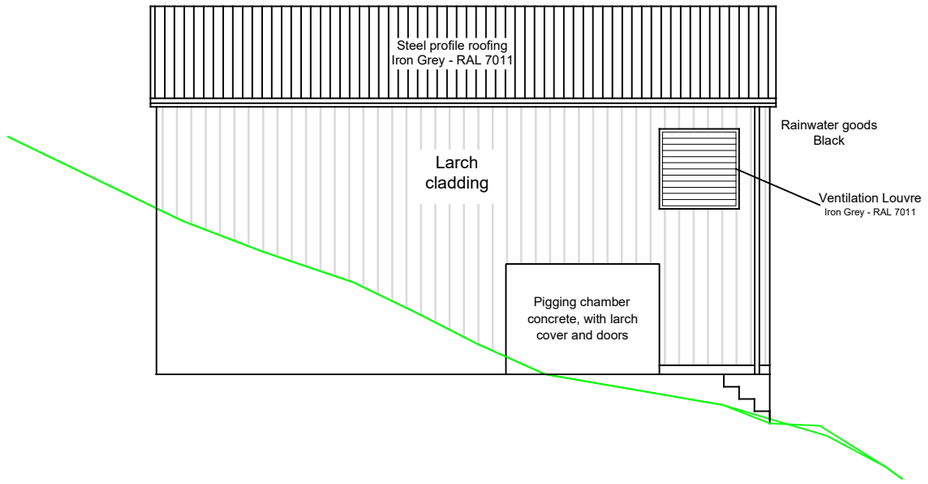
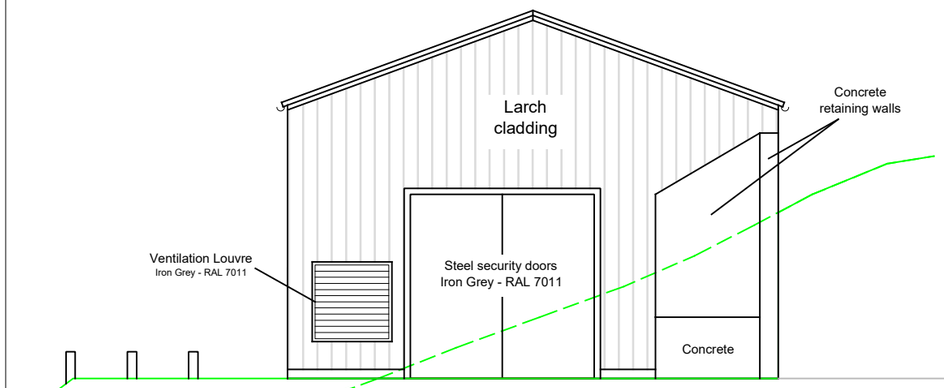
Blairgowrie
PH10 6BD
Tel. 01250 710656



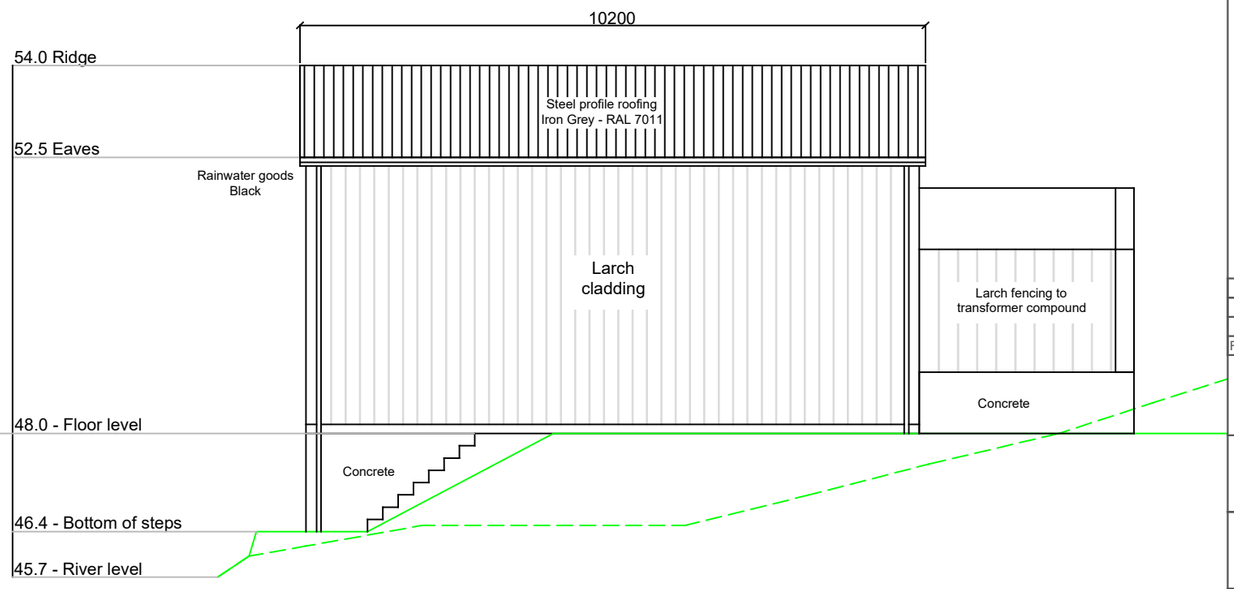
North west elevation



North east elevation



South east elevation



South west elevation

Scale 1:100

0mm 5000mm 10000mm

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Ground level - existing

Ground level - proposed

Rev	Description	Dwn	Chk	Date
A	Building finish changed	TC		15 Feb 18
	Original drawing	TC		12 Jul 17

Project
C067 - Allt Mhuic

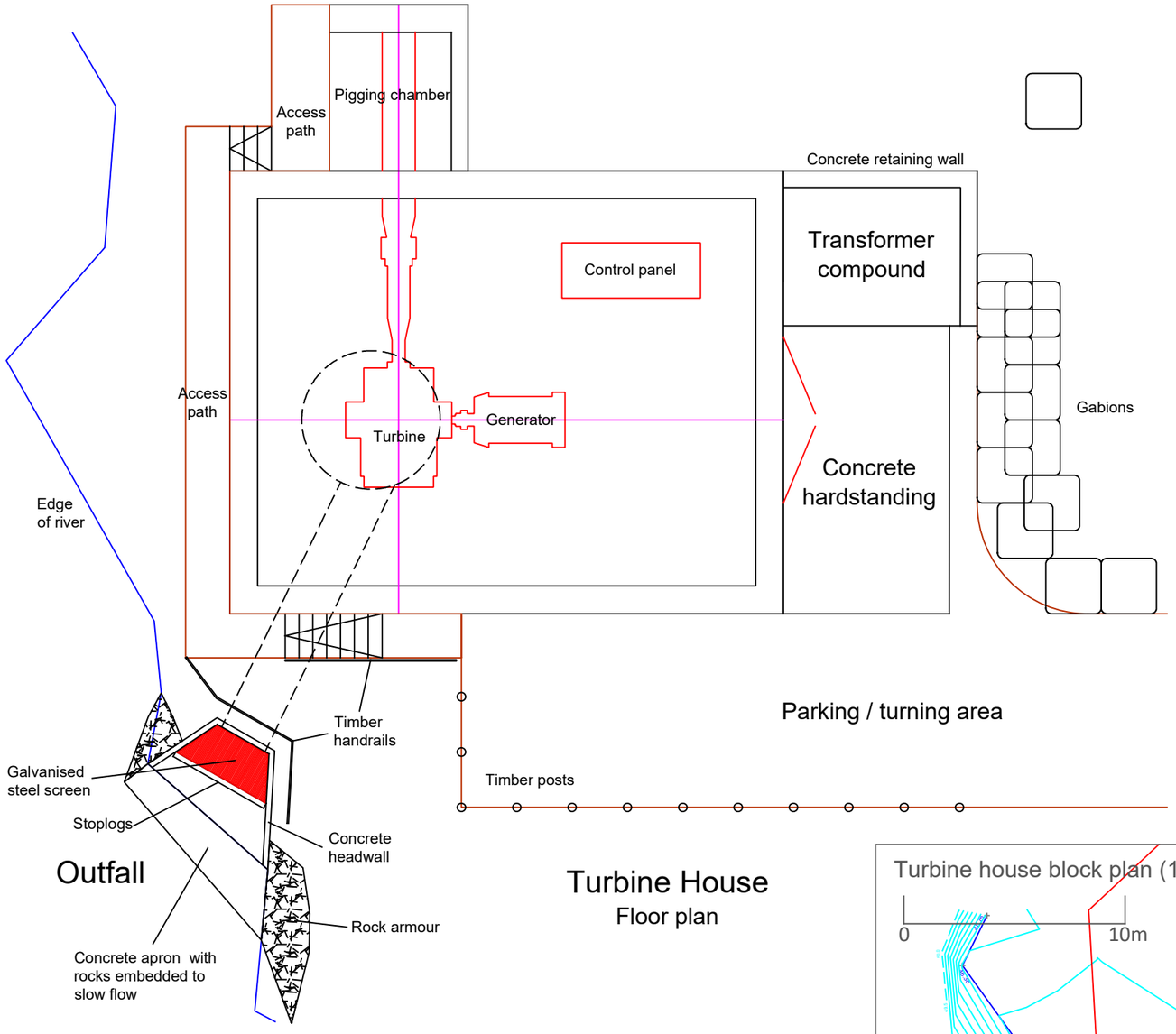
Drawing Title
Turbine House details
1 of 2

Scale
As indicated

Drawing No.
C067-104.1

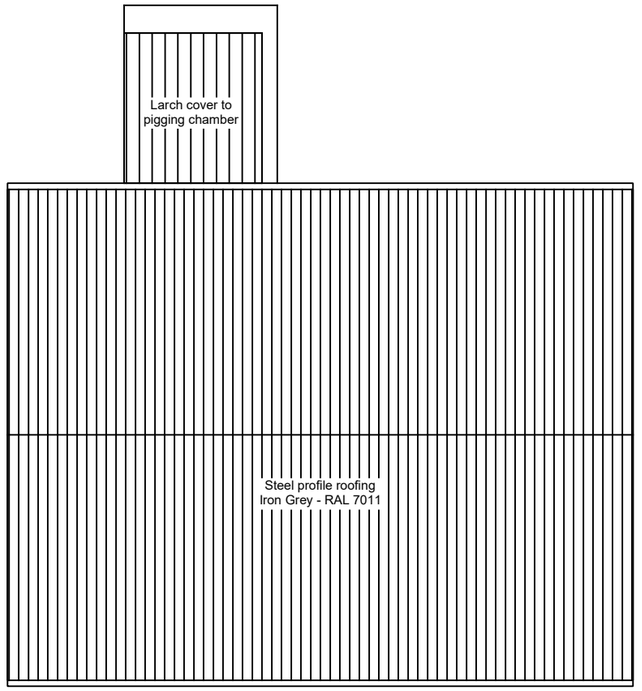
Rev
A

Glen Hydro Consulting
9 Reform Street
Blairgowrie
PH10 6BD
Tel. 01250 710656

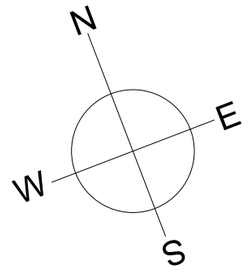


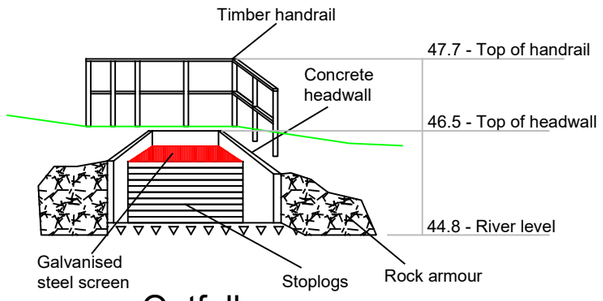
Outfall

Turbine House
Floor plan



Turbine House
Roof plan

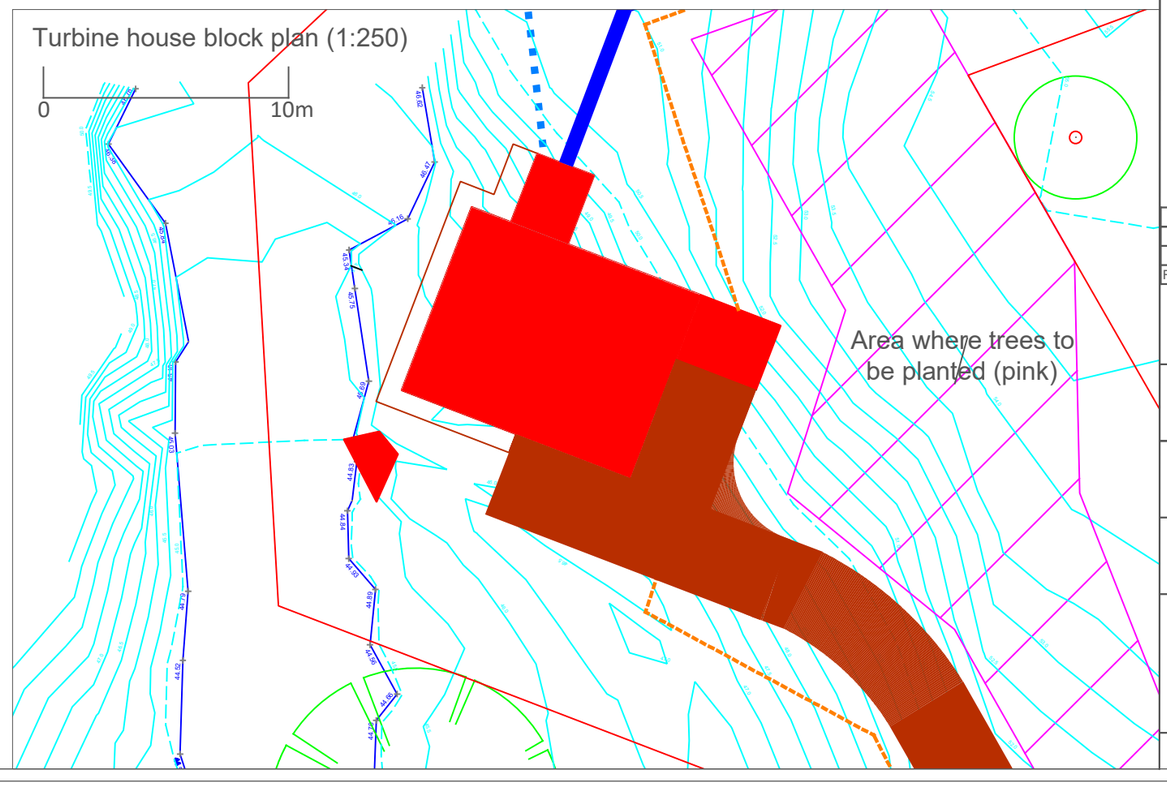




Outfall
south west elevation

Scale 1:100

0mm 5000mm 10000mm



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Key

- Site boundary
- Pipeline
- New permanent access track
- Path
- Grid connection
- Civil structures
- 10m buffer from river

Rev	Description	Dwn	Chk	Date
B	Compounds amended	TC		20 Mar 18
A	Pipeline route amended	TC		8 Sep 17
	Original drawing	TC		12 Jul 17

Project
C067 - Allt Mhuic

Drawing Title
Turbine House details
2 of 2

Scale
As indicated

Drawing No.
C067-104.2

Rev
B

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9 Reform Street
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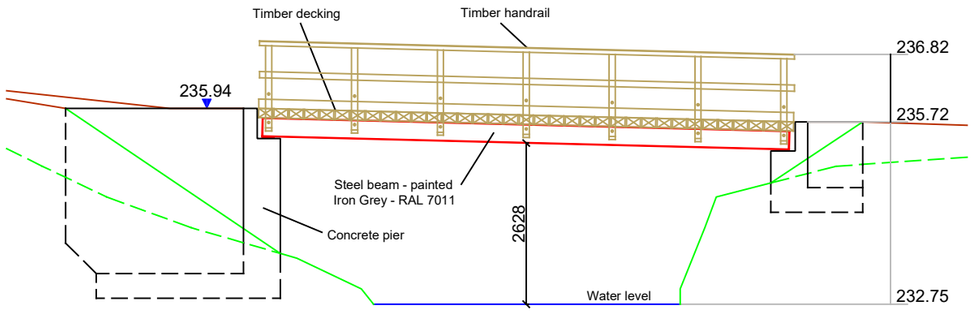
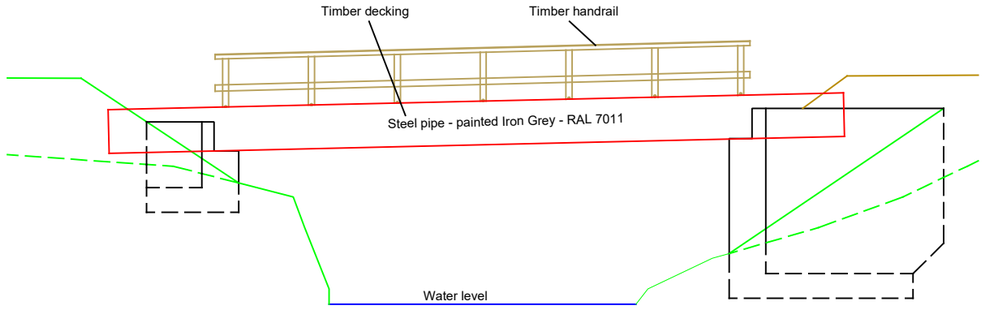
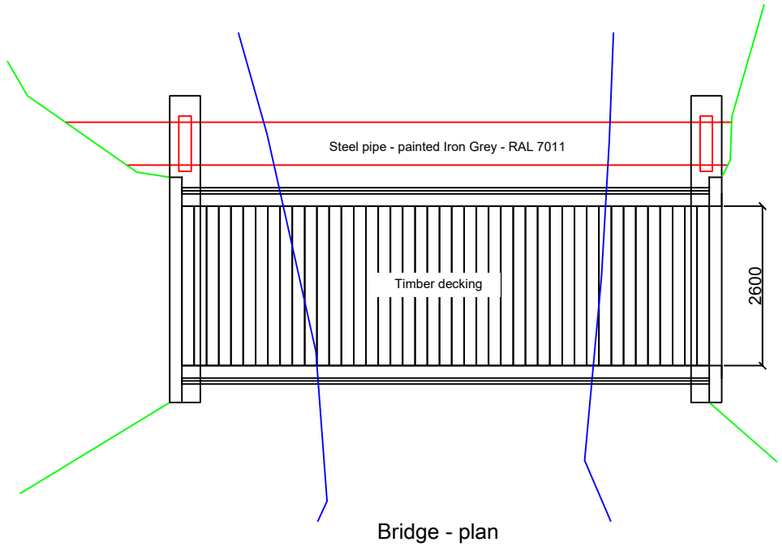
PH10 6BD
Tel. 01250 710656



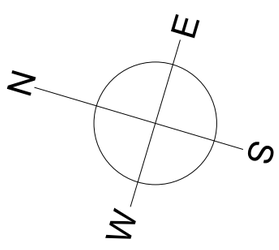
Bridge - west elevation

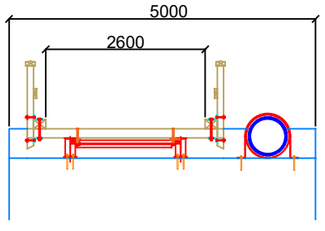


Bridge - east elevation



Bridge - plan

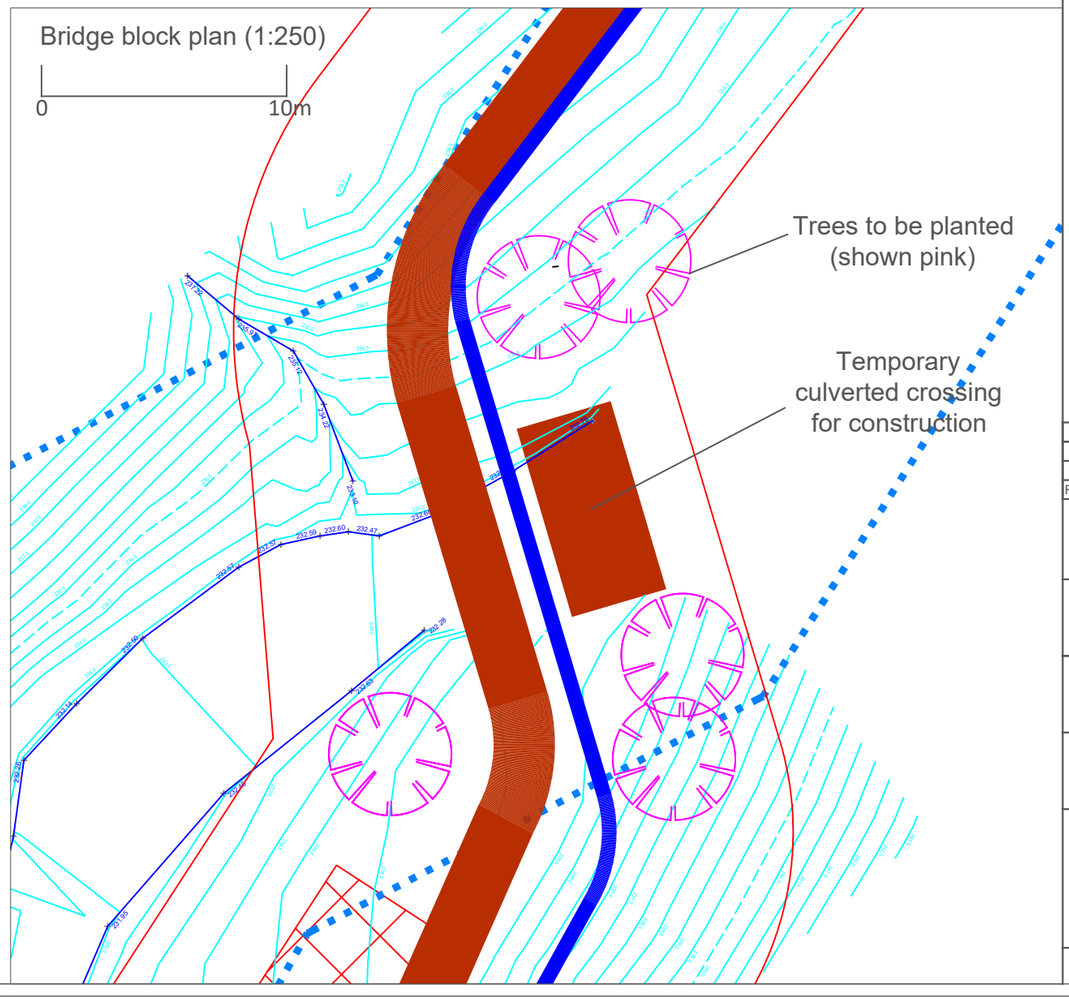




Bridge - section

Scale 1:100

Bridge block plan (1:250)



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Key

- Site boundary
- Pipeline
- New permanent access track
- Path
- Grid connection
- Civil structures
- 10m buffer from river
- Ground level - existing
- Ground level - proposed

Rev	Description	Dwn	Chk	Date
B	Compounds amended	TC		20 Mar 18
A	Pipeline route amended	TC		8 Sep 17
	Original drawing	TC		12 Jul 17

C067 - Allt Mhuic

Drawing Title
Bridge & pipe crossing details

Scale
As indicated

Drawing No.
C067-105

Rev
B

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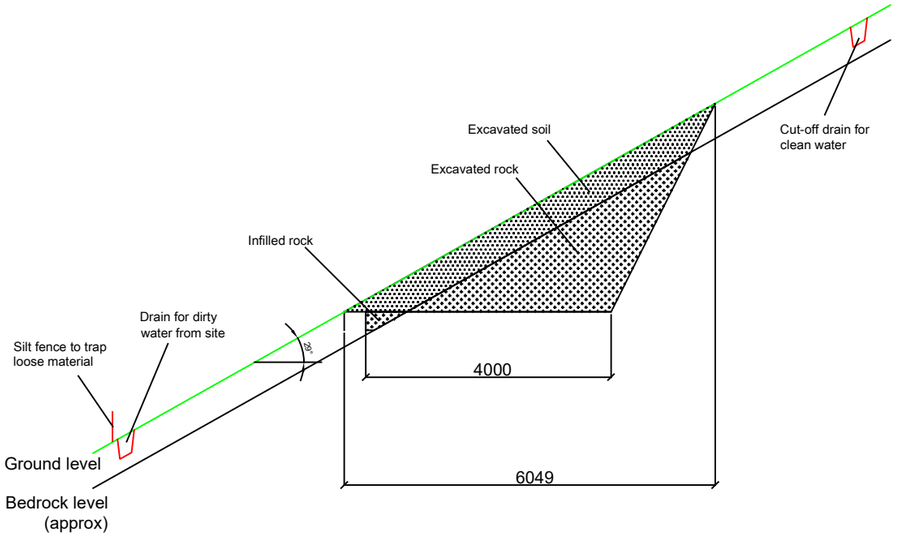
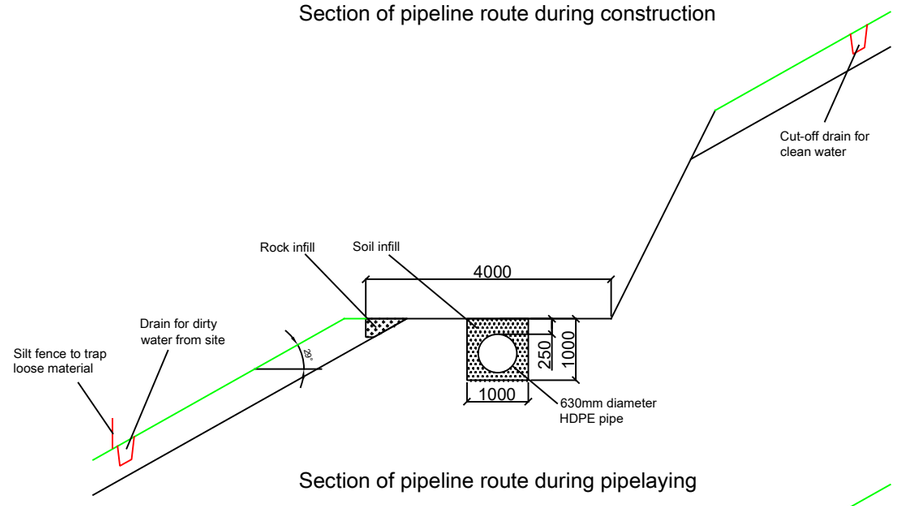
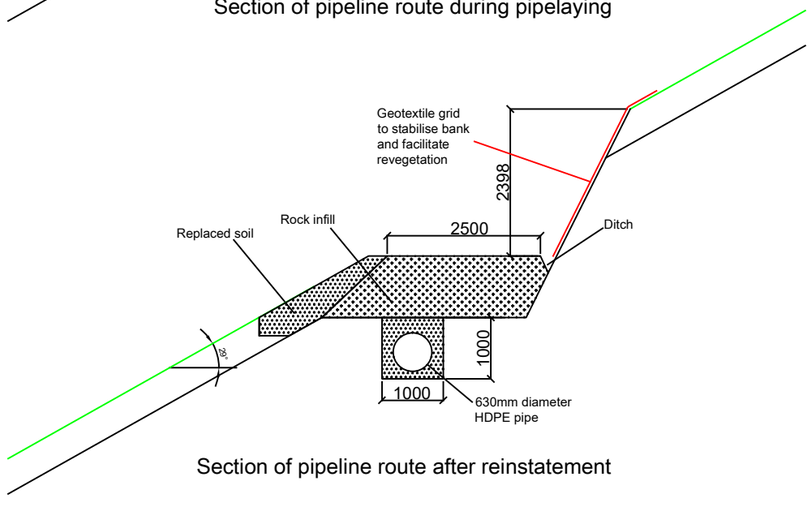
Tel. 01250 710656



Section of pipeline route during construction



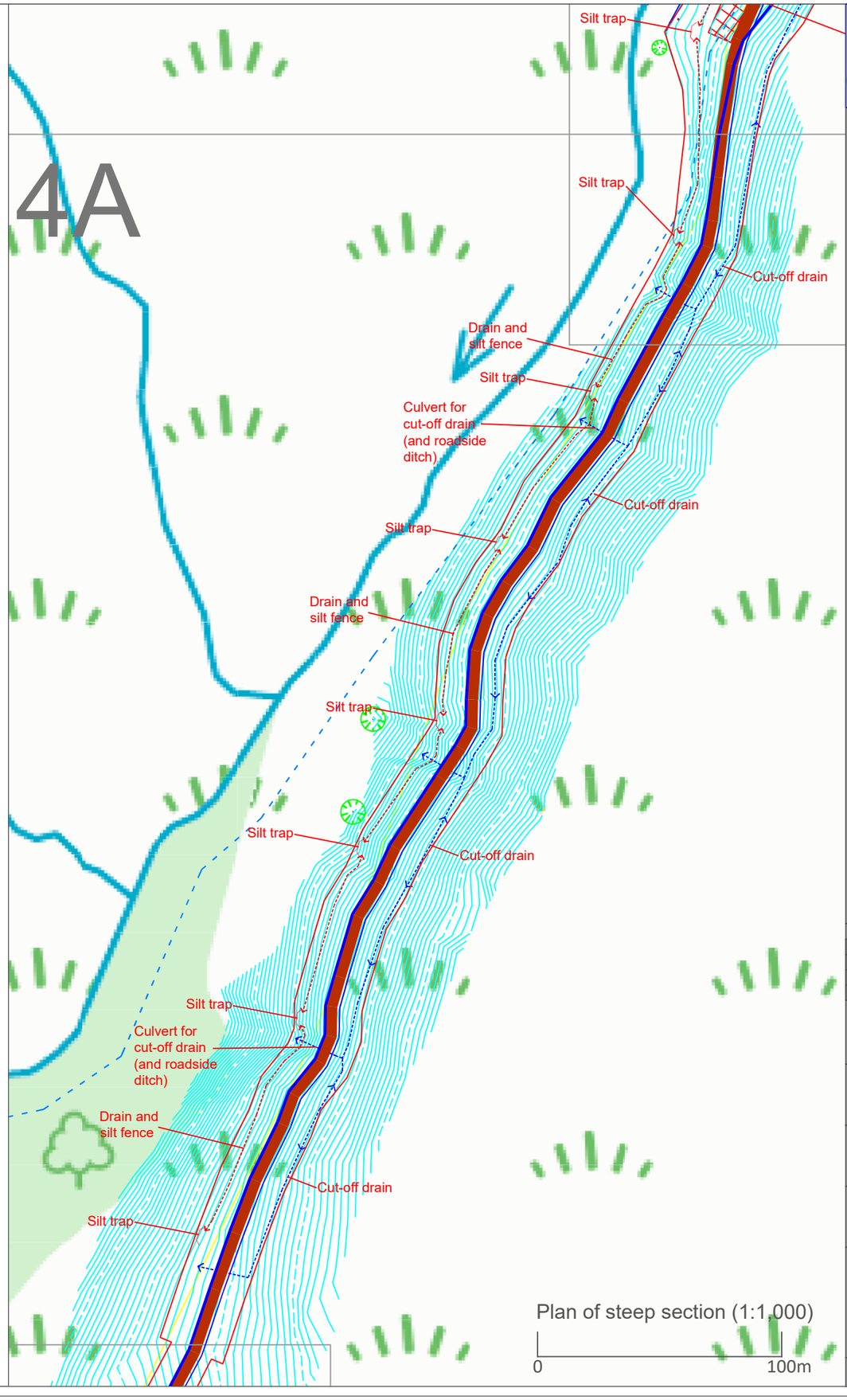
Section of pipeline route during pipelaying



Section of pipeline route after reinstatement

Scale 1:100

0mm 5000mm 10000mm



Plan of steep section (1:1,000)

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Key

- Site boundary
- Pipeline
- New permanent access track
- Path
- Grid connection
- Civil structures
- Contractor's compounds
- Quarries / borrow pits
- 10m buffer from river
- Temporary drain for dirty water during construction
- Temporary drain for clean water during construction
- Permanent roadside ditch formed at end of construction

Rev	Description	Dwn	Chk	Date
C	Site drainage added	TC		24 Aug 18
B	Compounds amended	TC		20 Mar 18
A	Pipeline route amended	TC		8 Sep 17
	Original drawing	TC		12 Jul 17

Project: C067 - Allt Mhuic

Drawing Title: Details of steep section of pipeline route

Scale: As indicated

Drawing No.: C067-106

Rev: C

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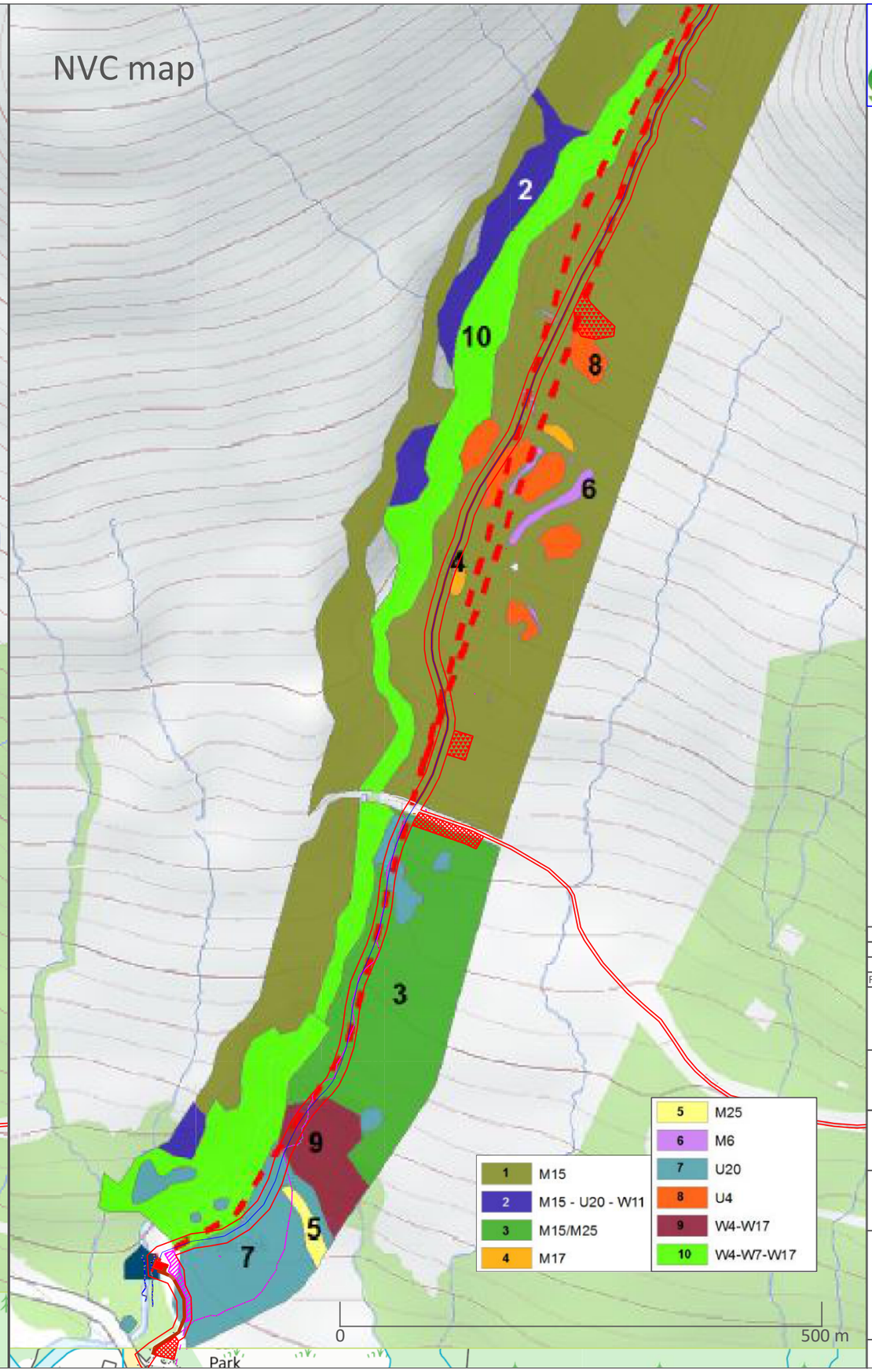
Peat depth map

NVC map



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Key

- Site boundary
- Pipeline - original
- Pipeline - proposed
- Path
- New permanent access track
- Civil structures
- Contractor's compounds
- Quarries / borrow pits

Rev	Description	Dwn	Chk	Date
B	Compounds amended	TC		20 Mar 18
A	Pipeline route amended	TC		8 Sep 17
	Original drawing	TC		12 Jul 17

Project

C067 - Allt Mhuic

Drawing Title

Peat depths and NVC

Scale

1:5,000 at A3

Drawing No.	Rev
C067-107	B

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Path closures

Section	Duration
A - B	For duration of works
B - C	No closure - access via temporary path
C - D	During pipeline construction (mid Sep 19 - Nov 19)
E - F	No closure

Contractor's compound

Site boundary

Pipeline

Turbine house

Contractor's compound

Temporary path to butterfly reserve

Butterfly reserve car park.

Ford

FB

Waterfall

Nature Reserve

Muick

Car Park

A

B

C

D

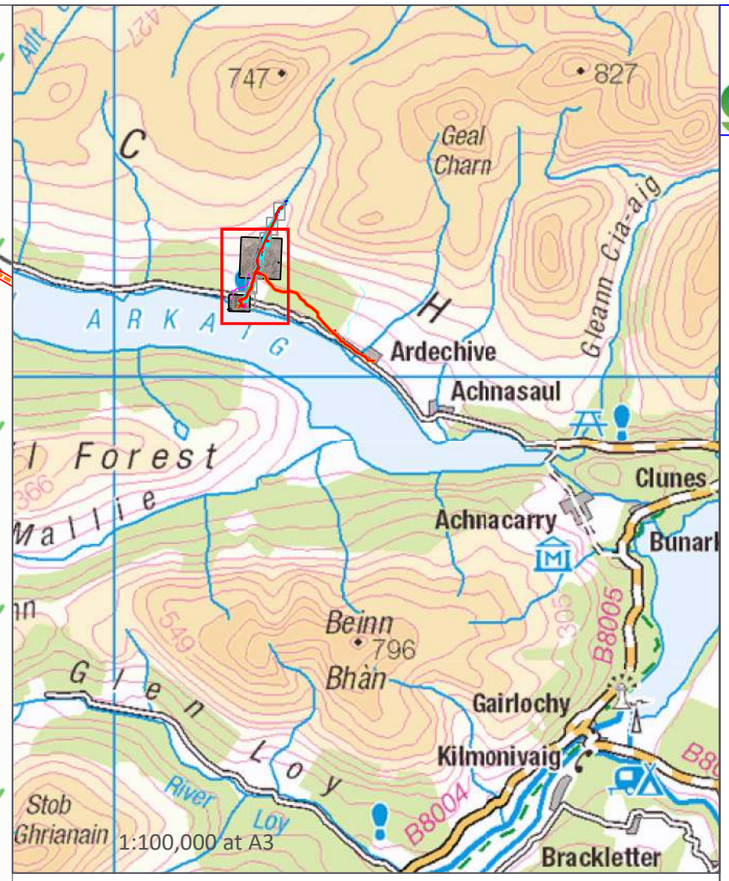
E

F

0

250 m

1:2,500 at A3



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Key

- Site boundary
- Pipeline
- New permanent access track
- Path
- Grid connection
- Civil structures
- Contractor's compounds
- Quarries / borrow pits

Rev	Description	Drawn	Ch'kd	Date
	Original drawing	TC		27 Aug 2018

Project: C067 - Allt Mhuic

Drawing Title: Access plan

Scale: As indicated

Drawing No.: C067-109

Rev:

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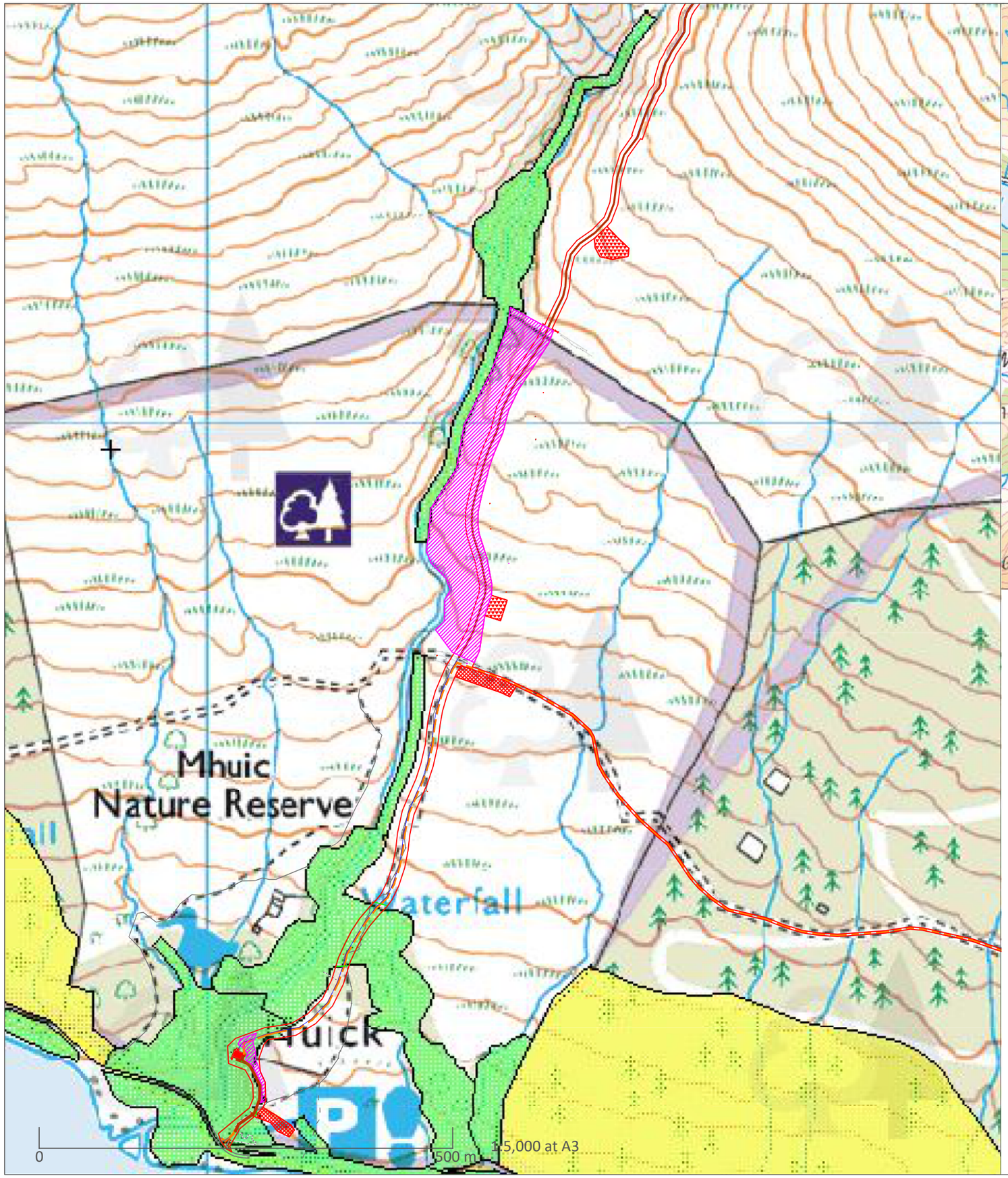

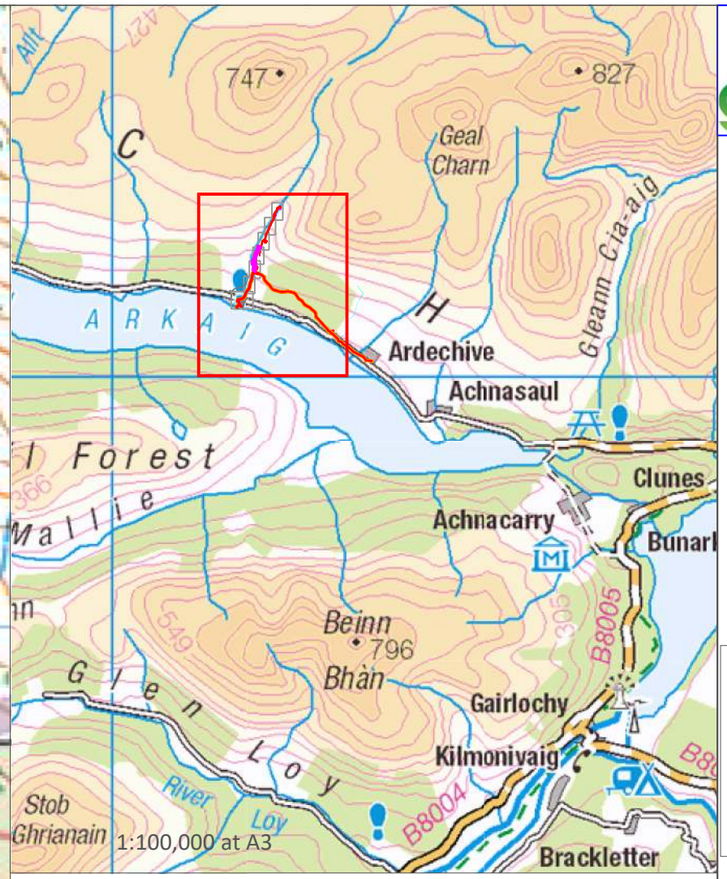

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Key

- Site boundary
- Pipeline
- New permanent access track
- Path
- Grid connection
- Civil structures
- Contractor's compounds
- Quarries / borrow pits
- Areas of replanting

NWSS Map

- Native woodland
- Nearly-native woodland
- Open land habitat
- PAWS

Rev	Description	Dwn	Chk	Date
	Original drawing	TC		26 Oct 18

Project
C067 - Allt Mhuic

Drawing Title
Site Layout showing native woodland and replanting

Scale
As indicated

Drawing No.
C067-110

Rev

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Coire Mhuic

Intake D

Long pipeline route uneconomic as increase in head small

Intake C

Pipeline route on steep ground for longer, with little gain in height

Higher pipeline route avoids steep ground but very long

Intake

NN 1273 9276

Bridge

NN 1265 9265

Intake A

Banks too steep below intake, no route to bring pipeline out

Lower pipeline route has long section on steep ground and many gulleys to cross

Proposed pipeline route

Routes avoiding some monitoring transects rejected as offering little advantage

Pipeline route avoiding butterfly reserve uneconomic due to higher compensation flow required by SEPA

Mhuic Nature Reserve

Waterfall

Waterfall

Muick

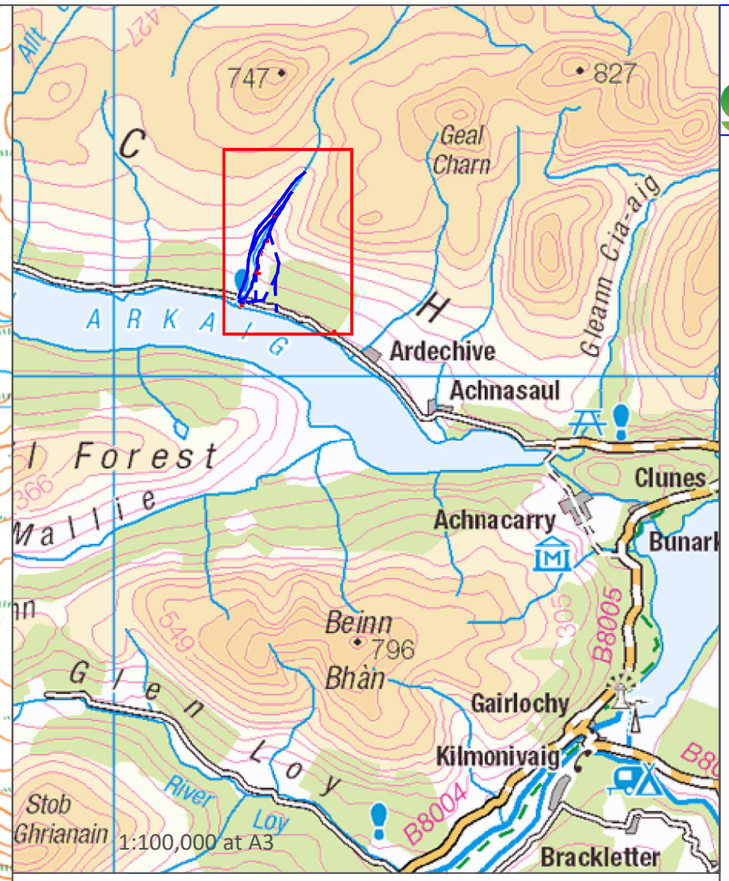
Turbine house and Outfall

NN 1203 9123

0

1000 m

1:10,000 at A3



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Key

- Pipeline - proposed
- Pipeline - alternatives
- Blue labels - proposed
- Red labels - alternatives
- Civil structures
- Contractor's compounds
- Quarries / borrow pits

Rev	Description	Drawn	Ch'kd	Date

Project

C067 - Allt Mhuic

Drawing Title

Alternatve layouts considered

Scale

As indicated

Drawing No.

C067-111

Rev

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Butterfly Reserve

1

2A

Path

Pipeline

Turbine house and Outfall

NN 1203 9123

Grid connection
(alternative route)

Muick

Grid connection
under track
(preferred route)

New permanent
access track to
turbine house

Contractor's compound
for turbine house works

Temporary path
to butterfly
reserve

0 100 m

1:1,000 at A3

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Key

- Proposed red-line boundary
- Pipeline
- New permanent access track
- Path
- Civil structures
- Contractor's compounds
- Quarries / borrow pits
- Inaccurately digitised site boundary

Rev	Description	Dwn	Chk	Date
C	Compound amended	TC		28 Aug 18
B	Compounds amended	TC		20 Mar 18
A	Pipeline route amended	TC		8 Sep 17
	Original drawing	TC		12 Jul 17

Project
C067 - Allt Mhuic

Drawing Title
Pipeline details 1 of 4
with NWSS woodland

Scale
1:1,000 at A3

Drawing No.
C067-103.1

Rev
C

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