

Wilds 18th Hole Trail

Planning & Development Recommendations

August, 2012



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Introduction

Green Leaf Resources was retained to complete an analysis and development plan for a trail along the Salmonier River and Hole 18 of the Wilds Golf Course. This analysis accomplishes three main objectives:

1. Confirm and flag in the field a trail right-of-way and identify all points of interest.
2. Outline a development plan for construction.
3. Outline next steps.

This report will address all three objectives and provide guidelines to implementing the recommendations.

Trail Summary Description

For the purposes of this report, the trail will be referred to as "The 18th Hole Trail" as it completely encircles that hole. Initial discussions suggested that the trail begin at the end of a dirt road just south of the hotel and end near the newly constructed villas to the west of the hotel. However these trail start and end points are located away from the main attractions (such as the hotel) and are not easily noticeable by visitors. Usually an ideal trail route would have a consistent walk surface (surface width, aggregate and appearance) from beginning to end, and begin at a key starting point that is easily noticeable, attractive and accessible to visitors. Therefore it is our recommendation that the trail start and end point begin next to the parking lot and hotel area (Please see sheet S1 and S5).

Using the suggested start and end point for the 18th Hole Trail, the route is approximately 1.6 Km in length and includes four key rest areas and points of interest. The main attraction to this trail is the spectacular views of the Salmonier River and its tributaries.

The proposed walk right-of-way is flagged with orange flagging tape. Key areas such as rest spots and stream crossings are double flagged for quick reference to the maps provided in this report. The suggested trail link to the resort is not flagged as this is simply a recommendation at this point.



Above: The views along the Salmonier River are the key attractions for this trail.

Below: The route right-of-way is well flagged.



Trail Development Plan

Permits and Approvals

Before any trail development continues, it would be appropriate to prepare permit applications to the regulatory agencies involved. Since the land is owned by the Wilds, an application to Crown Lands is not required. However the following permits and approvals may be required before work can progress:

1. Provincial Department of Environment and Conservation: Any works or undertakings within 15m of a body of water require approval from this department. This application will have to outline the walk route and identify details related to all proposed stream crossings.
2. Provincial Environmental Assessment Division: The Department of Environment and Conservation may determine that an environmental assessment be completed for this project. If so an initial environmental assessment application will be required. The division would then determine if this project has triggered a full blown environmental assessment.
3. Federal Department of Fisheries and Oceans: Any workings that may affect fish habitat require an application to this department:
4. Transport Canada: An initial inquiry to this department is suggested to determine if any of the proposed bridges cross navigable water. If a water course is deemed navigable, more information will need to be submitted to this department.

Although this is not a comprehensive list of all the necessary permits and approvals, it would be beneficial to discuss this project with these groups well in advance of construction.

Trail Clearing and Grubbing

The following suggestions will help ensure that an aesthetically pleasing walk right-of-way is cleared:

1. The flagged route does not have to be the centreline or edge of the trail. Feel free to move the trail right-of-way outside the flagged line in order to favour attractive vegetation or to create attractive turns and bends in the route.
2. Favour more mature and attractive trees. The walk right-of-way should be manoeuvred so that more attractive plants are preserved. Many mature birch trees can be found along this route as well as large spruce/fir. These specimen plants should not be cut.



In many instances major vegetation removal is not required.

3. In many cases, very little vegetation removal is required. Be selective when deciding how much to clear. Maintain a 2.5 m vertical clearance and a 2.5 m horizontal clearance. Since the trail surface is 1.5 m wide, this allows for 0.5 m of clearance on either side of the walk surface.
4. Follow proper pruning techniques when limbing branches and ensure that brush is completely removed from the walk right-of-way.
5. Grub away organic material and stumps from the walk surface area so it is prepared for subsurface aggregate. Apply typical cut and fill excavation techniques to create a relatively level surface.

The Walk Surface

1. The following illustration outlines a typical walk surface. Throughout this walk there are many poorly drained and wet areas therefore it is imperative that the walk surface be elevated to ensure it remains dry (see Sheet S8)
2. For this walk, a minimal of two aggregate layers are suggested. The base layer should consist of larger 102 mm (4 inch) rock or a similar material. The thickness of this layer will depend on the site conditions but will probably range from 0.15 m (6 inches) to 0.30 m (12 inches) on average. Once this layer is applied it should be tamped. This subsurface layer should be about 2 m wide.
3. The next layer should consist of Class A gravel and should be 102 mm (4 inches) to 150mm (6 inches) thick. This layer should be about 1.5 m (4.9 ft) wide. This layer should be tamped. If desired, this can serve as the walking surface.
4. If a more fine aggregate is desired for the walk surface, quarter minus can be applied. A 51 mm (2 inch) layer should be sufficient.
5. The final walk surface should have a 2% cross slope so that water will drain off the walk surface.
6. Since many sections will cut along a slope, stone edge retaining may be required in areas in order to stabilize the walk edge.



Stone edging used to retain a walk surface.

- Once the walk surface is prepared, topsoil should be applied to the edges to create a consistent 1.5 m wide walkway with a well defined edge. Clover seed or similar seed can then be applied to the topsoil area.

Drainage

- Water runoff and inadequate drainage are key problems related to surface deterioration and damage. It is critical that the walk surface be appropriately elevated, have drainage ditches where needed and have culverts at selected areas.
- The attached maps identify areas where culverts are required but more areas may be identified as trail development progresses.

Steps

- Several areas will require steps as the grade is quite steep in sections. Typical log steps can be installed where required (see sheet S7).
- These log steps can be made from 8 ft logs with the bark removed and a slab cut out on two opposite sides. Larch wood (locally known as juniper) is preferred. Do not use fir logs as they deteriorate quickly. These logs can be braced to the ground using rebar
- Improperly installed stairs can lead to a slip and fall injury so it is important to have stable and secure steps, with consistent rises.
- Where possible steps should be avoided by carefully selecting your walk route and by appropriate grading. Where possible, raise the walk surface to reduce grades as an alternative to installing steps.
- The sample detail provided is simply a guide to the construction of these steps. It would be appropriate for an engineer to review and approve an appropriate step detail.



Typical log steps.



Simple lookout areas such as this one should be installed in the areas identified.

Lookouts and Bridges

- This report outlines bridge locations and suggested locations for lookout and rest areas.

Details for these features was beyond the scope of work for this project and should be completed by an engineer.

2. Typically a rest area should be located every 300m along the route. A simple rest area can consist of a bench with a nice view. Some suggested rest areas are provided but more can be added at the discretion of management.

Trail Access Points and Entrys

1. Where appropriate trail links to selected areas of the Resort should be made. For example a trail connecting the RV Park to the main route is suggested as are the connecting links to the Villas and the hotel.
2. All gateways and entryways to the trail should be accompanied by a trailhead sign complete with a map and an inviting landscaped area.

Trail Safety

1. Some safety concerns related to this walk should be addressed. For example, where the walk crosses a golf cart path, a painted crosswalk and warning signage for trail users and golf cart users is appropriate.
2. Other warning signage and precautions should also be considered. Flying golf balls onto the trail right-of-way may be a concern in some sections.

Trail Start and End

As mentioned at the outset, an ideal trail route would have a consistent walk surface (surface width, aggregate and appearance) from beginning to end, and begin at a key starting point that is easily noticeable, attractive and accessible to visitors. Therefore it is our recommendation that the trail start and end point begin next to the parking lot and hotel area.

Since we were not aware of what landscape development plans have been prepared for this area, we cannot make definite recommendations for the trail route in this section. However sheet L5 does outline a general trail route but this would require some significant landscape improvements.



The trail could connect to the hotel through this area but some significant landscape improvements would be needed.

Materials and Labour Required

It was agreed that the managers of the project would finalize bridge details and therefore compile the materials needed for developing these bridges. The same would apply to the lookout areas suggested in this report.

This report will attempt to outline a list of the materials required to construct the walk surface. Trail amenities such as benches, signage and garbage bins are recommended for this trail but a detailed list of these items is not included in this report.

The following table outlines the materials, equipment and labour needed to prepare the walk surface including ditching, drainage features, edging and stairs.

Material	Measurement	Volume	Note
102mm (4") rock	1200m x 2m x 0.30m	720m ³	Used as required.
Class A aggregate	1600m x 1.5m x 0.15m	360m ³	Used on entire route. Can be final surface.
Quarter Minus Gravel	1600m x 1.5m x 0.05m	120m ³	Optional finished surface.
River rock for ditching/edging	Mixed sizes	10-20 loads	Install ditching where needed. Use larger rocks for edge retention where needed.
Culvert	600mm x 3m long	n/a	Install at initial entrance at end of dirt road.
Culvert	300mm x 2m long	20	Install with ditching where drainage is a concern
203mm (8") diameter larch logs	2.5m (8 ft long)	1200	Install steps where required.
Rebar	25M 2.5m (8') long	2400	Used for bracing steps.
Topsoil	1600m x 0.5m x 0.15m	120m ³	Used for defining the walk edge.
Clover Seed Mix	1600m x 0.5m	800m ²	n/a

*estimates involve order of magnitude quantities of +/- 20%.

It is estimated that the vegetation clearing, grubbing, excavation and construction of this 1.6 Km trail would take approximately 8-12 weeks depending on the labour force and the equipment used.

Next Steps

With the completion of this report, the Wilds should be in the position to continue the development of this project. The following list should help guide the process to follow:

1. Design all bridges and lookout platforms.
2. Confirm the route connecting to the hotel and parking area.
3. Obtain permits and approvals from required regulatory agencies.
4. Prepare construction schedule and finalize budget and materials.
5. Clear the walk right-of-way following the suggestions in this report.
6. Construct the walk surface including staircases, bridges, lookouts and drainage features.
7. Install walk amenities such as benches and garbage bins.

During the construction phase of this project other planning work can be initiated such as the development of a detailed signage and interpretive system (inform, warn, identify and guide) which is a key component of any trail.

11x17 Detailed Sheets

The following sheets outline specific instructions to guide the development of this trail.

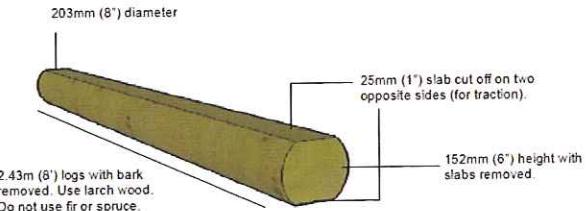
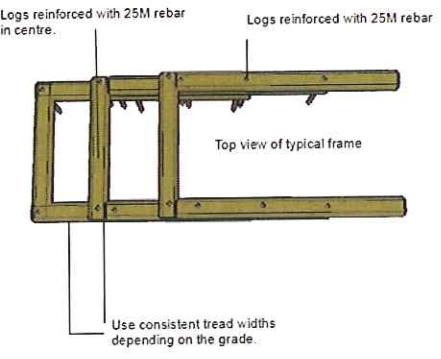
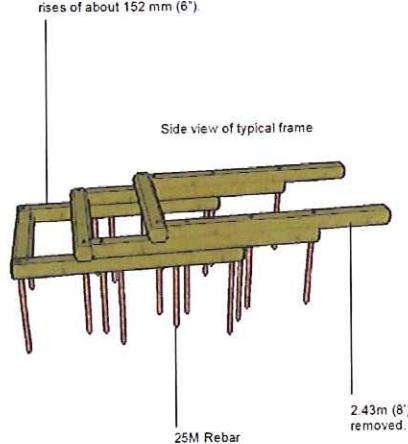
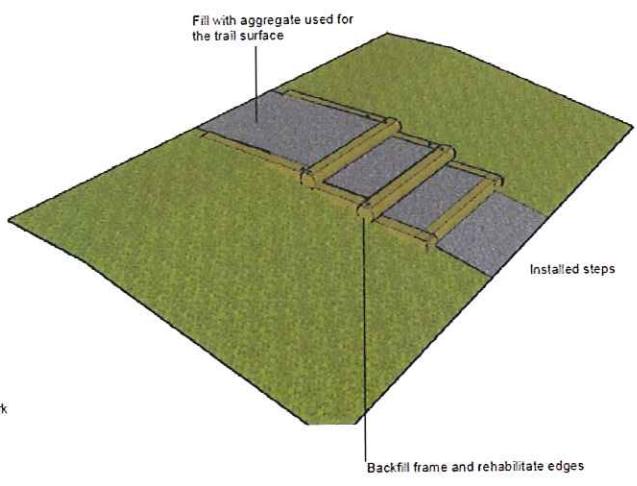


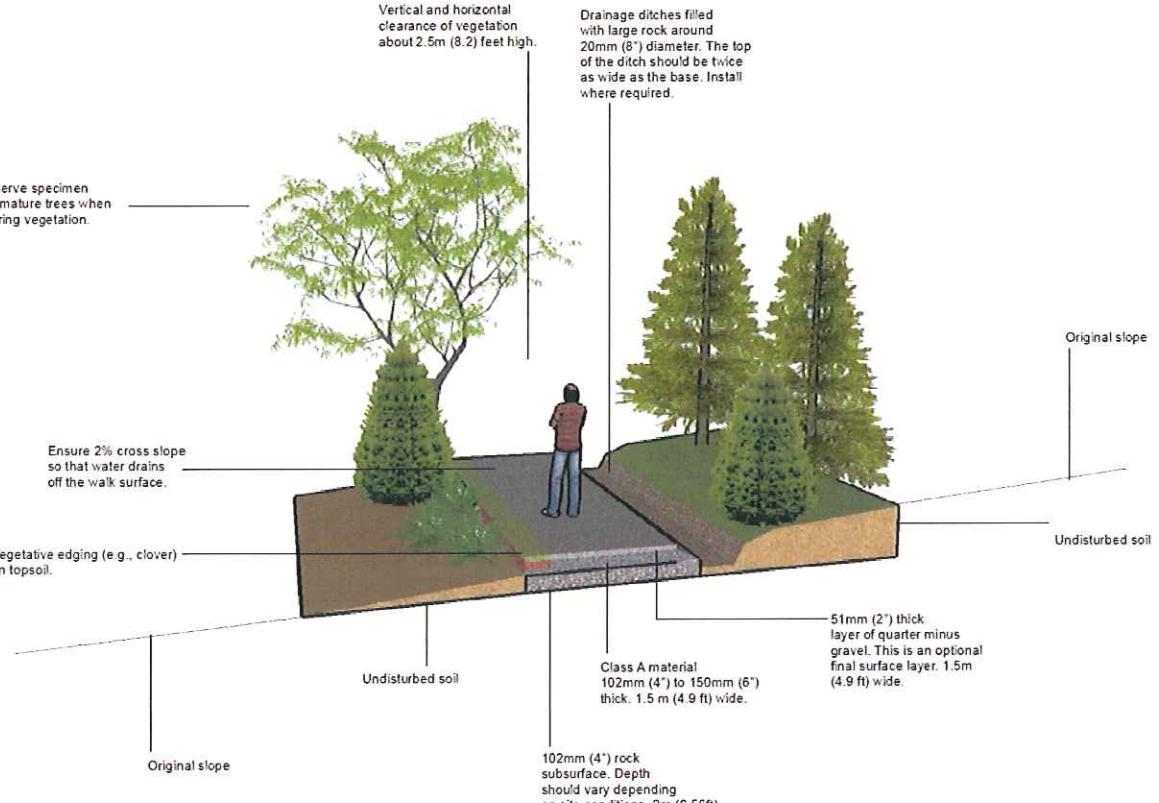








	Project Title: 18th Hole Trail Development
	Scale: NTS
	Sheet Title: General Details for Wooden Log Steps
	Drawn By: Marc Poirier  96 Ashford Drive Mount Pearl NL, A1N 2Z5 709-690-2200 Sheet Number: S7

 <p>Project Title: 18th Hole Trail Development</p> <p>Scale: NTS</p> <p>Sheet Title: General Details for Walk Surface and Vegetation Removal</p> <p>Drawn By: Marc Poirier</p> <p>green leaf resources 96 Ashford Drive Mount Pearl NL, A1N 2Z5 709-690-2200</p> <p>Sheet Number: S8</p>	
<p>Preserve specimen and mature trees when clearing vegetation.</p> <p>Vertical and horizontal clearance of vegetation about 2.5m (8.2) feet high.</p> <p>Drainage ditches filled with large rock around 20mm (8") diameter. The top of the ditch should be twice as wide as the base. Install where required.</p> <p>Original slope</p> <p>Undisturbed soil</p> <p>Original slope</p> <p>Undisturbed soil</p> <p>Vegetative edging (e.g., clover) on topsoil.</p> <p>51mm (2") thick layer of quarter minus gravel. This is an optional final surface layer. 1.5m (4.9 ft) wide.</p> <p>102mm (4") rock subsurface. Depth should vary depending on site conditions. 2m (6.56ft) wide.</p> <p>Class A material 102mm (4") to 150mm (6") thick. 1.5 m (4.9 ft) wide.</p> <p>Ensure 2% cross slope so that water drains off the walk surface.</p> <p>Original slope</p>	