REPORT

Dianne River Access Trail

HAMLET OF RANKIN INLET
RANKIN INLET, NUNAVUT

PROJECT NO. ABC1000465

PROJECT NO. 1000465

REPORT TO **Hamlet of Rankin Inlet**
P.O. Box 310
Rankin Inlet, NU
X0C 0G0

ON **Dianne River Access Trail**

November 30, 2005

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1.0 INTRODUCTION

1.1 Purpose and Organization

The Hamlet of Rankin Inlet (Hamlet) requested Jacques Whitford Limited (Jacques Whitford) to prepare a "Prospective Analysis" for the proposed Dianne River Access Trail in Rankin Inlet. The Prospective Analysis is intended to provide both quantitative and qualitative information about this specific access trail proposal and will be used to facilitate regulatory review, provide design guidance and substantiate funding. Additionally, a "Preliminary Environmental Scan" is appended to identify potential environmental concerns and mitigation measures associated with the project.

The Prospective Analysis provides an outline of the proposal being reviewed, a review of potential project costs and benefits, concluding with a summary section. Figures, a selection of photographs and the "Preliminary Environmental Scan" are included in the appendices.

1.2 Activities Undertaken

Preparation of the Prospective Analysis involved the collection and review of available site information; consultation with officials from the Hamlet, Department of Environment (DOE), Department of Community Government Services (CGS); and a site visit. Jacques Whitford participated with representatives of the Hamlet and CGS on an All Terrain Vehicle (ATV) route reconnaissance survey on September 24, 2005. Information collected during the interviews, site visit and from other sources was reviewed to prepare this report.

2.0 THE PROPOSAL

2.1 General

The Hamlet wishes to upgrade the traditional ATV trail between the Hamlet and the Dianne River Narrows. The poor condition of the existing trail discourages many residents from using the trail and accessing traditional fishing areas along the Dianne River. The trail is intended to be upgraded for single lane ATV use during the snow free period. The trail begins on the right side of the community's "New Dump Access Road" and continues in a westerly direction to a narrowing of the Dianne River ("the Narrows") which has been a traditional fishing location for the community. The location of the traditional ATV trail is illustrated in Figure 2, **Appendix A**.

The Hamlet proposes to upgrade the existing trail to provide safe and enjoyable access to the Dianne River for all residents, especially elders. Improvements to the trail are intended to provide as dry and smooth a trail as possible. As such gravel will be added in many areas and culverts will be strategically placed to promote drainage and maintain trail conditions. The trail is intended for ATV use and will not

be upgraded to a standard to allow use by other vehicles. Improvements to the trail are consistent with the Nunavut Transportation Strategy, specifically recommendation #54 which states "There is an opportunity to limit environmental damage by providing improved inter-community trails which will safely accommodate most travelers between communities who would otherwise travel randomly over the land".

The existing trail is primarily located within the Hamlet boundaries; however, a short section of the trail near the mouth of the Dianne River is located on Inuit Owned Land (Figure 3, **Appendix A**). Design, construction and operation of the upgraded access trail would be managed by the Hamlet. Construction is expected to occur over a multi-year period. Some degree of operational control over access trail use, as necessary, can be exercised through municipal bylaws.

2.2 Route

Route reconnaissance involved inspection of the existing trail, documenting areas requiring improvements and identifying options for re-routing to avoid physical constraints and/or environmentally sensitive areas. Participants in the September 25 route reconnaissance included Nick Lawson of Jacques Whitford, Mannasie Oingonn of CGS and Arny Brown of the Hamlet.

Weather conditions were good during the site visit, allowing for inspection of all areas of the trail. Surface water was not frozen and all streams crossed were flowing. GPS waypoints were recorded along the route to enable the route to be plotted and to identify stream locations or where specific improvements and/or mitigation may be required. Figure 2, **Appendix A** illustrates the route of the traditional trail, including any variations confirmed during the field visit.

Most of the traditional trail to Dianne River is located on low-lying fine-grained soils, which were wet during the reconnaissance trip. The trail was typically incised throughout most of its length, providing a path for both standing and flowing water, particularly in the poorly drained fine-grained soils. The large areas of poorly drained fine-grained soils and presence of water throughout the spring, summer and fall present challenges to constructing and maintaining an improved trail. Whenever practical, the trail should be higher in elevation than the surrounding grade to prevent erosion and terrain damage. In areas of significant trail incisement, rutting and erosion it would appear most practical to build a new trail on natural terrain beside the existing trail, rather than try to repair the existing trail. A description of the terrain conditions encountered and typical trail designs is contained in the following section.

2.3 Terrain Conditions

The proposed route generally covers three different types of terrain as summarized below. Access trail design and construction should accommodate each of these terrain types.

2.3.1 Eskers and/or Granular Soils

There are many esker systems in the project area that provide an excellent base on which to construct an access trail. In general, the eskers and granular deposits contain a mixture of well-drained granular materials – sands, gravel and stones which provide an excellent base for an ATV trail. Vegetation is generally sparse in these areas as a result of poor soil structure and previous ATV traffic. These areas provide a solid, dry, elevated surface for access trail alignment.

When located on eskers or granular deposits, the access trail would be surfaced by a layer of pit run material to provide strength and define the limits of the access trail as illustrated in Figure 4**, Appendix A**. In some cases it may be beneficial to grade the existing trail flat before applying any additional material so that the trail remains elevated and drains properly.

2.3.2 Rock Fields

The proposed route passes through several areas where rocks protrude from the soil. The rocks range in size from 200mm to 500mm in diameter or greater. Several rock fields in the area near the Narrows were encountered. While some rocks are completely exposed and can be easily moved, many of the rocks are deeply embedded in the soil making removal difficult and potentially damaging to underlying terrain.

Within the rock fields it is expected that access trail construction will involve the placement of additional rock to create a relatively flat elevated trail base followed by surfacing with pit run material. The typical cross-section illustrated in Figure 4 can be modified to suit site specific conditions and provide a solid access trail using the minimum amount of imported materials.

2.3.3 Fine Grained Poorly Drained Soils

The majority of the route traverses areas characterized by fine-grained poorly drained soils, often in lower elevations and persistently wet. While some of the fine-grained soils may dry up during the summer period, many of the wet areas encountered during reconnaissance were reported to remain wet throughout the spring and summer. Intermittent pools of standing water were observed in the low-lying areas. Flowing water was observed at several locations. These are the types of areas that have developed into muddy, wet and wide trail sections which can be difficult to pass through and result in ongoing and expanding terrain damage.

Figure 5 illustrates a typical cross-section for access trails constructed in areas of fine-grained soils. Where the trail is incised below the surrounding grade, a new trail alignment at least 5 metres away should be developed rather than reconstructing the existing trail. Geotextile should be placed on the ground to restrict movement of the granular material into the soil. Rock would be placed on top of the geotextile to form a solid base. The access trail base would be surfaced with pit run material. The depth of fill would vary according to site specific conditions, but would need to be sufficient to maintain traffic above standing water and prevent erosion.

2.3.4 Stream Crossings

The proposed route crosses fourteen small streams between its origin on the New Dump Access Road and its terminus at the Narrows. For the most part the streams are small, channeling localized drainage only. Typical stream widths range between 0.5 and 1m with depths ranging from 0.2 to 0.4m. Stream gradients at all crossings were generally very low. The stream banks have been eroded from ATV traffic at most of the existing stream crossings. Continued ATV and bank erosion has resulted in widening of the channel and further bank erosion as travelers search for easier locations to cross. Stream banks and channels are in natural conditions where a well developed trail is not present, usually immediately downstream of the current crossing. A summary of stream crossing information is contained in Appendix B.

Installing proper drainage and crossing structures at each crossing should provide a net environmental benefit as it will focus traffic over a structure, eliminating the current ongoing bank erosion and stream sedimentation. Figure 6, illustrates a typical cross-section for construction of stream crossings. Culverts will be sized according to flows at each individual crossing. While the presence of fish habitat within the drainages could not be confirmed during this study, proposed mitigation and monitoring during and after construction will assume the stream and receiving waters contain fish habitat.

2.4 Design and Construction

The Hamlet of Rankin Inlet proposes to manage the design and construction of the proposed access trail. The routing and preliminary cross sections included in this report will provide a basis for final alignment and design.

2.5 Land Status

Most of the proposed access trail is located within the Hamlet boundaries. However, as depicted on Figure 3, the area of the trail near the mouth of the Dianne River falls within Inuit Owned Lands (IOL) Parcel RI-09. This IOL parcel is administered by the Lands Division of the Kitikmeot Inuit Association (KIA). An access permit would be required to improve and retain management control of the trail within the IOL parcel. The KIA should be contacted by the Hamlet to initiate the access permit review process.

2.6 Public Consultation

The proposed route has been reviewed and approved by the Hamlet of Rankin Inlet, following public review and discussion. An open house to present the proposal and route was hosted by the Hamlet on March 17, 2005 in Rankin Inlet. The open house was attended by approximately 10 members of the public and consensus to support the proposal and proposed route was achieved. The Hamlet Council expressed its support for the project and proposed route in resolution #153-05 passed at the Council meeting of September 8, 2005.

2.7 Project Environment

2.7.1 Biophysical Environment

The access trail is within the Maguse River Upland Ecoregion of the Southern Arctic Ecozone (Environment Canada 1996). The terrain consists of rolling uplands with occasional bedrock outcrops. The access trail is located within the zone of continuous permafrost. Lakes and tundra ponds are numerous. Typical vegetation in the area consists of dwarf birch, alder and willow shrubs, moss, lichens and sedges. Wildlife in the area includes barren-ground caribou, grizzly bear, fox and lemmings. Birds include ptarmigan, raptors, ducks and geese. The area is characterized by long cold winters and short cool summers. On average, daytime temperatures are above freezing for the months of June to September, generally corresponding to the months of greatest precipitation (July to September). Spring melt typically occurs in May and early June.

The area of the access trail is characterized by a low rolling topography dominated by eskers, rock outcrops and lakes. The majority of the trail is located on fine grained poorly drained soil. Standing and flowing water is present in areas of lower elevations crossed by the trail. In these areas the trail is muddy and rough, often widened as a result of users seeking a drier smoother alternative. Continued use of these areas will continue to damage the terrain, affecting drainage and vegetation. While it is expected that some of the flowing water crossed on the trail flows into fish bearing waters, the velocity of flows, distance between the trail and receiving water bodies and the presence of vegetation along flow paths should prevent any eroded materials from entering fish habitat.

2.7.1.1 Peregrine Falcons

The DOE has provided information which indicates that there are peregrine falcon nests within the trail area. Further information about peregrine falcons is provided below.

Peregrine falcons typically nest on cliff ledges in open areas that provide suitable and abundant prey. They also establish nesting ranges that are actively guarded and can extend up to one km from the nest. Peregrines mainly hunt other birds in the air, so open tundra and waterways are important habitats. Breeding typically begins in May and early June. Two to four eggs are laid and incubated by both parents for approximately 36 days. Peregrine chicks begin to fly 35 to 40 days after hatching. Adults will continue to feed the chicks for five to six weeks after they fledge (GNWT 2005).

The Peregrine Falcon *tundrius* subspecies (*Falco peregrinus tundrius*) is considered a species of Special Concern and is listed on Schedule 3 of the federal *Species at Risk Act (SARA)*. Species that are listed on Schedule 3 were listed by COSEWIC prior to October 1999 and must be reassessed using revised criteria before they can be considered for addition to Schedule 1 of *SARA*. The Peregrine Falcon *tundrius* subspecies is currently not on the priority candidate list for reassessment (COSEWIC 2005).

SARA states that no person shall kill, harm, harass, capture or take an individual of a wildlife species that is listed as an extirpated species, an endangered species or a threatened species. It also states that no person shall damage or destroy the residence of one or more individuals of a wildlife species

that is listed as an endangered species or a threatened species, or that is listed as an extirpated species if a recovery strategy has recommended the reintroduction of the species into the wild in Canada. Also no person shall destroy any part of the critical habitat of a listed endangered species or a listed threatened species on federal lands or that is in a province or territory and that is not part of federal lands. Nest sites are also protected under Nunavut's *Wildlife Act*. Due diligence on behalf of the Hamlet should be employed with regard to these prohibitions and efforts to reduce potential impacts to the nest sites are warranted.

Furthermore, human intrusion near nest sites can cause breeding interruptions and/or nest abandonment. Upgrades to the trail should occur after the young have completely fledged (mid-late August) from the nest. Ideally, the trail would be relocated away from the two nests to minimize the potential for disruption during both construction and operation. It should be noted that the use of the trail on subsequent years may impact the breeding falcons and that this should be taken under consideration with respect to the trail development and use.

The DOE has suggested that an area enclosed by a radius of 1.6km from each nest should be considered a sensitive buffer zone (Figure 3, **Appendix A**). The DOE recommends no activity be conducted within these buffer zones when the nests are occupied. Additionally the DOE recommends that the trail route be out of the line of site of the nests and has offered to assist with adjusting the route alignment to achieve this objective.

2.7.2 Historical Resources

There are 187 known archaeological sites on the 1: 50,000 map sheet (55 K/16) crossed by the existing access trail. The majority of these sites are located along the Meliadine River and in the vicinity of the mouth of the Dianne River. No archaeological sites were observed to be on the trail during reconnaissance. Existing development at the mouth of the Dianne River may already have impacted some sites.

2.8 Potential Environmental Impacts

Improving the existing trail has the potential to impact the environment during construction and operation. Improvements can also limit or reduce the impacts currently resulting from use of the existing trail. Construction impacts can result from the direct physical footprint of the access trail, extraction of granular resources for construction, installation of structures at water crossings, equipment accidents or malfunctions and disturbance to wildlife such as peregrine falcons. Operational impacts result from use and maintenance of the access trail and may include: increased off trail use, littering, spills, disturbance to wildlife and possible effects on fish and wildlife populations resulting from increased harvesting activities. The potential impacts are discussed below and summarized in the Preliminary Environmental Scan included in **Appendix D**.

In general improvements to the trail should eliminate the terrain damage currently occurring at a number of locations, primarily the stream crossings. Natural rehabilitation of these sites is proposed.

2.8.1 Construction

As noted previously, the existing trail is built primarily over fine-grained poorly drained soil. As a result there are many areas where the trail is incised and collects and/or channels drainage. In some areas standing water persists throughout spring and summer and trail use has resulted in a wide muddy trail which is both difficult to travel on and results in further terrain damage as users seek a drier smoother route (See Photographs, **Appendix C**). In areas where the trail is located on well drained granular materials or rocky areas, impacts to underlying and surrounding terrain is negligible.

It is recommended that in areas where the trail is located on fine grained soils which have been damaged from use, the existing alignment be abandoned and a new trail be constructed on natural ground surface 5 to 10 metres away from the existing alignment. This approach will provide several benefits, including:

- Eliminating the need to repair the existing alignment before upgrading;
- Enabling the alignment to be properly constructed, allowing for reduced maintenance and increased longevity; and
- Allowing for natural rehabilitation of impacted areas.

For trail sections along dry granular soils or in rocky areas, the existing alignment can be utilized and improved.

Direct contact between equipment and the natural ground surface is not expected during construction as the end-dump method of construction will be followed where vehicles dump material off the leading edge of the access trail and equipment pushes it in place from the previously constructed part of the access trail. Vegetation will be lost as a result of covering by trail material; however, little impact outside of the actual access trail area should occur.

The majority of the access trail is located in areas of fine grained soil material with corresponding high moisture content. Freeze-thaw action in these areas may result in differential settlement and an irregular access trail surface. It is suggested that these areas be covered in a geotextile before placing the granular trail material on top. This method will allow for water to drain, without losing trail material into the soil. The layer of granular trail material will also help insulate the underlying soil, assisting in the development of a solid trail base.

A variety of granular resources will be required to construct the access trail. Some of these materials may be acquired from existing sources while some new borrow sites may need to be established. It is expected that any new borrow sources will be established under authority of the Hamlet and therefore be subject to current requirements for environmental protection. As granular deposits are often important wildlife habitat and/or locations of archaeological resources an investigation of proposed sites should be undertaken prior to their development.

Construction of water crossing structures as discussed in Section 2.3.4 should result in a net environmental benefit as the bank erosion and sedimentation currently occurring will be eliminated. Crossing structures will be installed downstream of the current crossings where the channel is narrow and well defined. Crossing structures should be installed during late fall when flows are at their

minimum, thus minimizing the potential for sedimentation of streams. Clean granular material will be used to surround culverts and rip rap will be placed on the upstream face of the crossing to channel flow and protect the structure. Monitoring of waters downstream of each crossing for sediments is proposed to be undertaken as follows:

- One sample collected immediately prior to construction to establish pre-disturbance conditions;
- Daily samples collected 5 m and 20 m downstream during construction;
- One sample collected 5m and 20 m downstream the open water season following construction.

Should monitoring indicate elevated suspended sediments resulting during construction or post construction additional mitigation measures (e.g., silt fences, dry crossing construction, etc.) will be implemented to reduce sediment concentrations in streams.

Equipment used during the construction of the access trail will likely include trucks to haul material and a Caterpillar Dozer (CAT) to push the material on the access trail alignment. Loaders may also be used to transfer material. The potential for spills of fuels, oils and other hazardous materials from these vehicles can be minimized with proper pre-project servicing, off-site refueling and regular observation and maintenance during the project.

Disturbance to wildlife and habitat may occur during construction. All construction activities can occur within the trail footprint, eliminating direct impacts to habitat. Noise from construction activity can impact birds and wildlife, causing them to temporarily or permanently abandon their territory. The primary concern is the abandonment of peregrine falcon nests. Routing mitigation has been suggested above. Additionally, to avoid potential abandonment of nests it is recommended that construction activity not occur until after the peregrine chicks are fully fledged, approximately mid to late August each year.

2.8.2 Operation

Potential environmental impacts during the operational phase can result from increased use of the trail and area. While it is expected that construction of an improved trail will focus users on a single trail, the provision of an improved trail will encourage more use than currently occurs. Unrestricted travel off the access trail may cause impacts to the environment. Additionally, more users will likely result in more material being brought and discarded along the access trail or at the Dianne River. These potential problems can not be prevented but can be minimized through education and enforcement.

The access trail will terminate at the Dianne River Narrows, an important traditional fishing location. An improved trail would make it easier for more people to access the Narrows and other nearby locations. Fishing pressure on the resource could increase over a short period of time with potential effects on the resource. Consideration of this occurrence should occur prior to completion of trail upgrading and the appropriate management mechanisms established.

3.0 PROJECT COSTS

Preliminary cost estimates have been developed for the proposed access trail based on the conceptual design contained in this report and typical local third party costs. A 15% contingency factor has been included in the preliminary construction estimate. Table 3.1 summarizes the preliminary cost estimate for construction.

Table 3.1 – Estimated Project Costs

Item	Unit Cost	Units	Subtotal
Design	$5,000	Lump Sum	*$5,000*
Equipment			
Cat	$150/hr	200	$30,000
Loader	$120/hr	200	$24,000
Truck	$95/hr	200	$19,000
Fuel	$1.1/L	5000	$5,500
Sub-total			*$78,500*
Materials			
Granular material	$15/$m^3$	12,000m^3	$180,000
Culverts and Geotextile		Lump Sum	$100,000
Sub-total			*$280,000*
Labour	$25/hr	800	*$20,000*
Sub-Total			*$300,000*
SUB-TOTAL			$383,500
Contingency (15%)			*$57,525*
Grand Total			**$441,025**

It is understood that the Hamlet will be undertaking this project with either its own forces or through contract. It is expected that construction of the proposed access trail would occur over several years, reducing the annual capital allocation required. With the exception of some design expertise and culvert purchase and transportation, all project expenditures will be local.

Operational costs should be limited to regular maintenance and repair and is estimated at $5,000 annually.

4.0 POTENTIAL PROJECT BENEFITS

4.1 Construction

The majority of project expenditures will occur locally, with the exception of costs for design and the purchase and transportation of culverts. Local expenditures are estimated at approximately $340,000. Local expenditures will occur for the following components:

• Project Management and Reporting	Hamlet
• Equipment Rental	Hamlet and Contractors
• Fuel Supply	Local Businesses
• Material Supply	Hamlet and Contractors
• Labour	Local residents

4.2 Operation

The access trail has been proposed by the Hamlet to provide improved access for residents to traditional fishing locations on the Dianne River during the snow-free period. As such the trail is primarily for local users. Tourist activities will likely continue at the Meliadine River area where a territorial park and associated services are available. Therefore, tourist use of the upgraded trail, at least at the outset, is expected to be limited.

4.2.1 Improved Access and Safety

The current trail to the Dianne River is in poor shape and as a result is poorly utilized. A properly constructed and maintained trail will provide a defined and safe driving surface that will allow all ATV access to the Dianne River, without the fear of getting lost or stuck along the way. This will open up the Dianne River area to more residents than currently visit the area due to poor trail conditions.

4.2.2 Harvesting and Recreation

Residents currently utilize the mouth of the Dianne River and the Narrows for fishing and recreation. An improved trail will enable more people to access the Dianne River and possibly result in more use of the fisheries resource. Management action to maintain the resource may be required in the future if harvesting activity negatively impacts the resource.

4.2.3 Tourism

The access trail is proposed for local use, however, over time tourists may use the trail as they look for alternatives to the Meliadine River area. Increased tourism opportunities can generate increased

economic benefits in the form of guiding opportunities and increased expenditures resulting from longer stays in the community by tourists.

4.2.4 Environmental Benefit

The current trail is located primarily on fine grained poorly drained soils, which in some locations have developed into persistently wet muddy sites. Terrain in these areas has become damaged as a result of use during wet conditions. Rutting and widening of the trail is visible in these areas and this damage will increase with continued use (Photographs, **Appendix C**). Improvement of the existing trail as proposed will provide a new improved trail which will minimize ongoing impacts and allow abandoned damaged sections to naturally rehabilitate. Effective construction methods on the improved trail can protect the sensitive terrain from damage. Additionally, properly installed drainage structures should prevent erosion, water ponding, and sedimentation of streams.

4.2.5 Improving the Transportation System

The GN's Transportation Strategy supports the development of an improved transportation infrastructure within Nunavut. New and/or improved access trails such as proposed herein are recognized as one way of achieving the objectives of the Strategy.

4.2.6 Summary of Benefits

The potential project benefits outlined above are summarized as follows:

- Approximate local expenditures of $340,000 representing approximately 80% of estimated project cost;
- Improved and safer access to the Dianne River area for fishing and recreational activities;
- While intended primarily for local use, the improved trail will provide new fishing and recreational opportunities for tourists visiting the community; and
- Proper design and construction will minimize negative environmental impacts from the improved trail, reducing current impacts to streams and allowing the existing trail to rehabilitate as users shift to the improved trail.

4.3 Measuring Potential Project Benefits

Quantifying potential project benefits beyond direct expenditures during construction is difficult as they depend largely on human behaviour, outcomes of which can not be guaranteed. However, it is possible to gain a measure of the benefits provided by the improved trail through monitoring activity on the trail. Effective measurement requires a single agency to be responsible for monitoring. As project sponsor, it is reasonable that the Hamlet takes responsibility for reporting the benefits that trail construction and operation provides. Monitoring could include a survey to determine types and levels of activity generated during construction and operation. Surveys may be undertaken through a variety of approaches, including observations of activity, questionnaires delivered to all local residents and agencies, or surveys of trail users only. Whatever methods are used, monitoring surveys should be

undertaken in a consistent manner and on a regular basis. The type of information to be collected and reported on could include:

- Number of people receiving employment and value of business opportunities from construction and operations;
- Number of residents using trail;
- Number of tourists using trail;
- Activities undertaken on or at termination of trail;
- Amount and species harvested on trail or at terminus;
- Infrastructure development along trail;
- Number of safety incidents; and
- Environmental conditions.

The project sponsor would be responsible for conducting and reporting on the survey of trail use. This information would be utilized to verify previous predictions and better evaluate future needs.

5.0 SUMMARY

The Hamlet of Rankin Inlet proposes to conduct improvements to the existing ATV trail to the Dianne River Narrows. Intended primarily for local use the trail would provide improved access to traditional fishing locations on the Dianne River

If properly planned, constructed and operated the access trail is unlikely to cause significant environmental impacts beyond its footprint. The improved trail should result in a net environmental benefit as its use will eliminate current terrain damage and stream sedimentation. Construction activity in the area of peregrine falcon nests should be avoided during the period when the nests are occupied. The improved trail can provide a variety of potential benefits to local residents that would last for the duration of trail use.

6.0 REFERENCES

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APPENDIX A

Figures

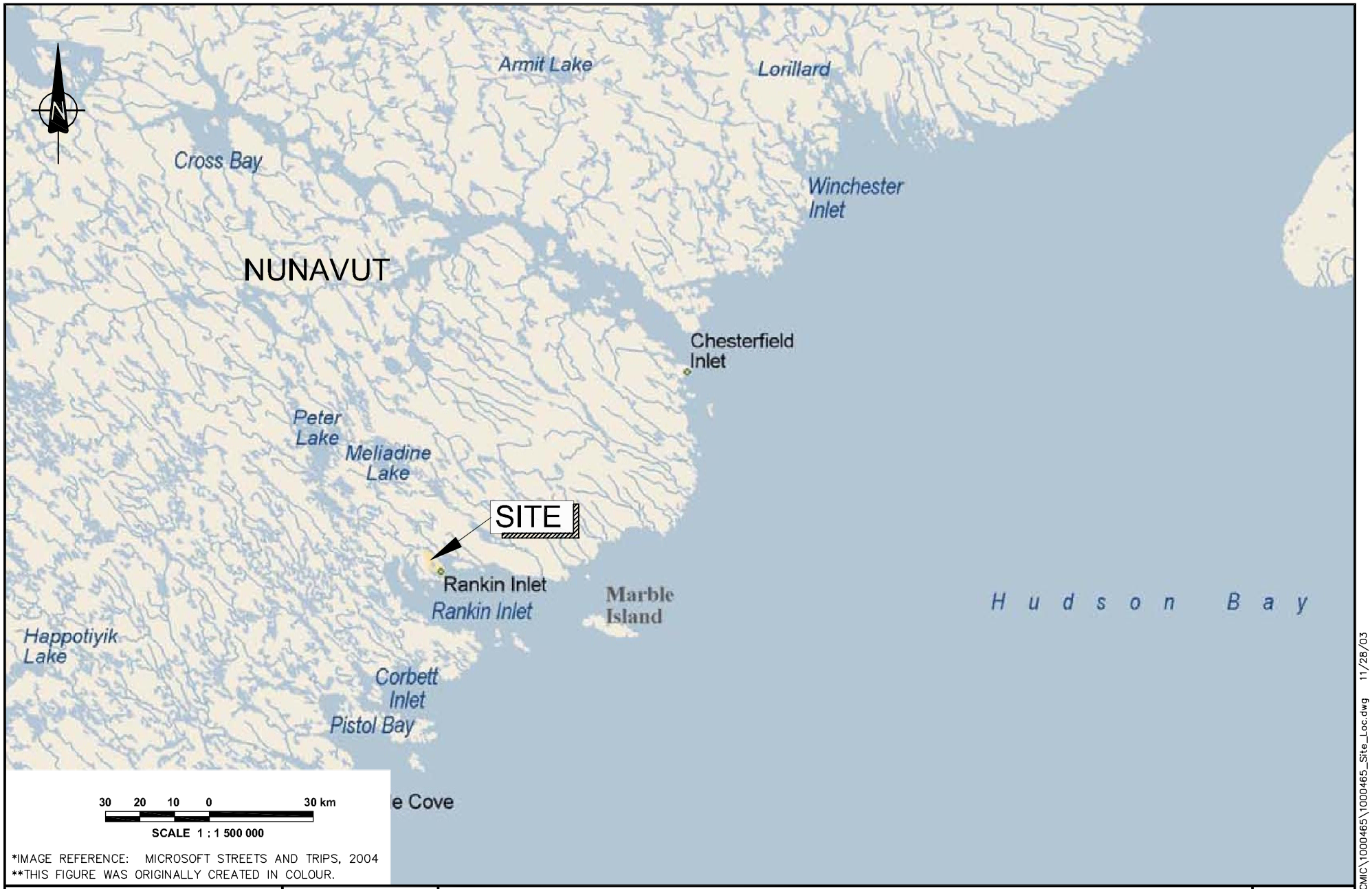

*IMAGE REFERENCE: MICROSOFT STREETS AND TRIPS, 2004
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525000 530000 535000 540000

6975000 6970000 6965000

N

14 13 12 11 10 9 8 7 6 5 4 3 2 1

Legend

Water Crossing

Proposed Trail

Figure 2 Proposed Dianne River Trail Route

UTM NAD27 ZONE 15
(GPS Points transformed from WGS84 Datum)

1:50,000

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525000 530000 535000 540000

6975000

6970000

6965000

N

Ijiralik Territorial Park

Parcel RI-09

K U D L U L I K

Legend

- Proposed Trail
- Territorial Park
- Peregrine Falcon Nest Area
- Peregrine Falcon Study Area
- Land Parcel RI-09
- Municipal / Hamlet Boundary

Figure 3 Route - Dianne River Trail

UTM NAD27 ZONE 15
(GPS Points transformed from WGS84 Datum)

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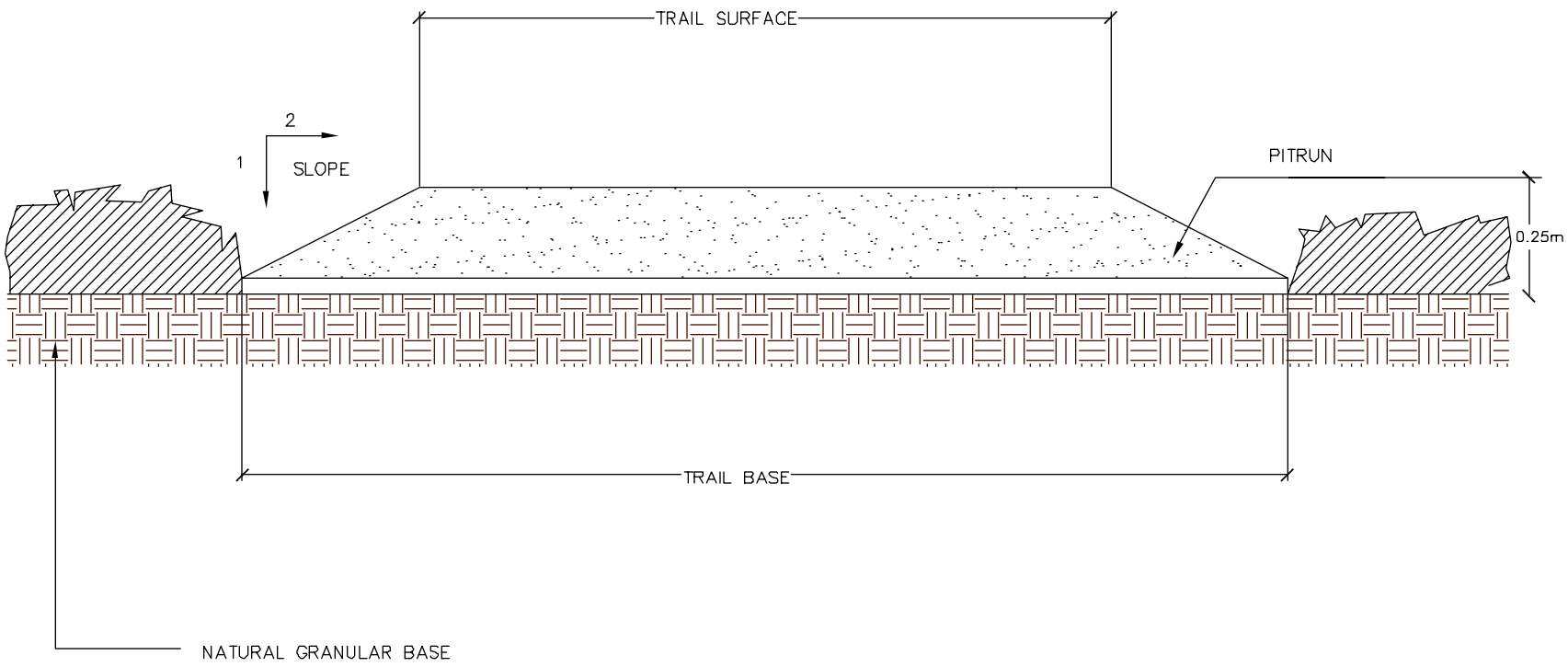

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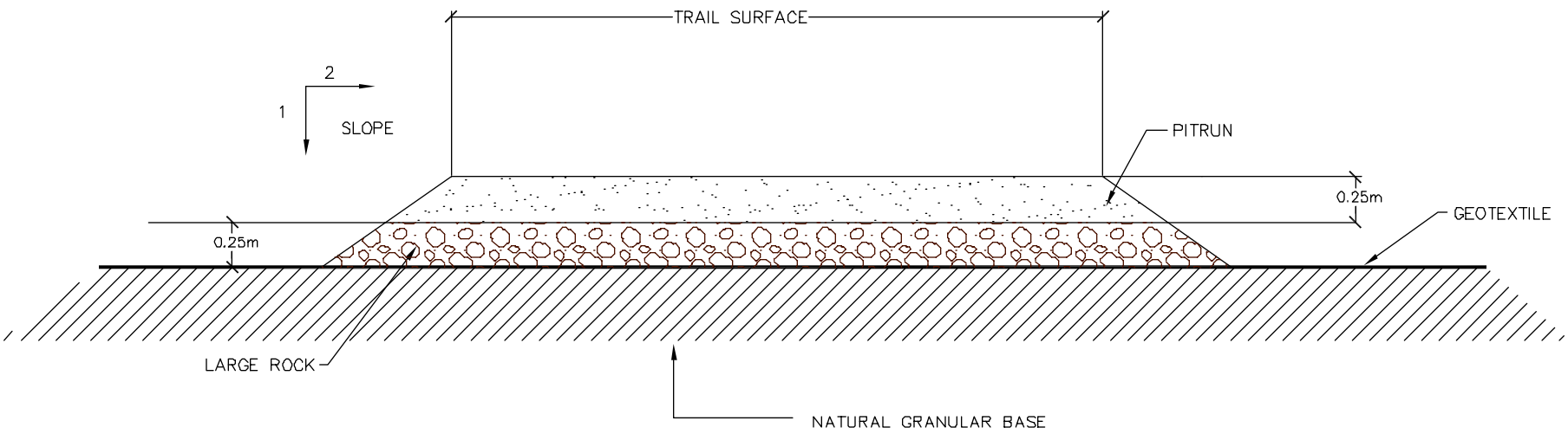

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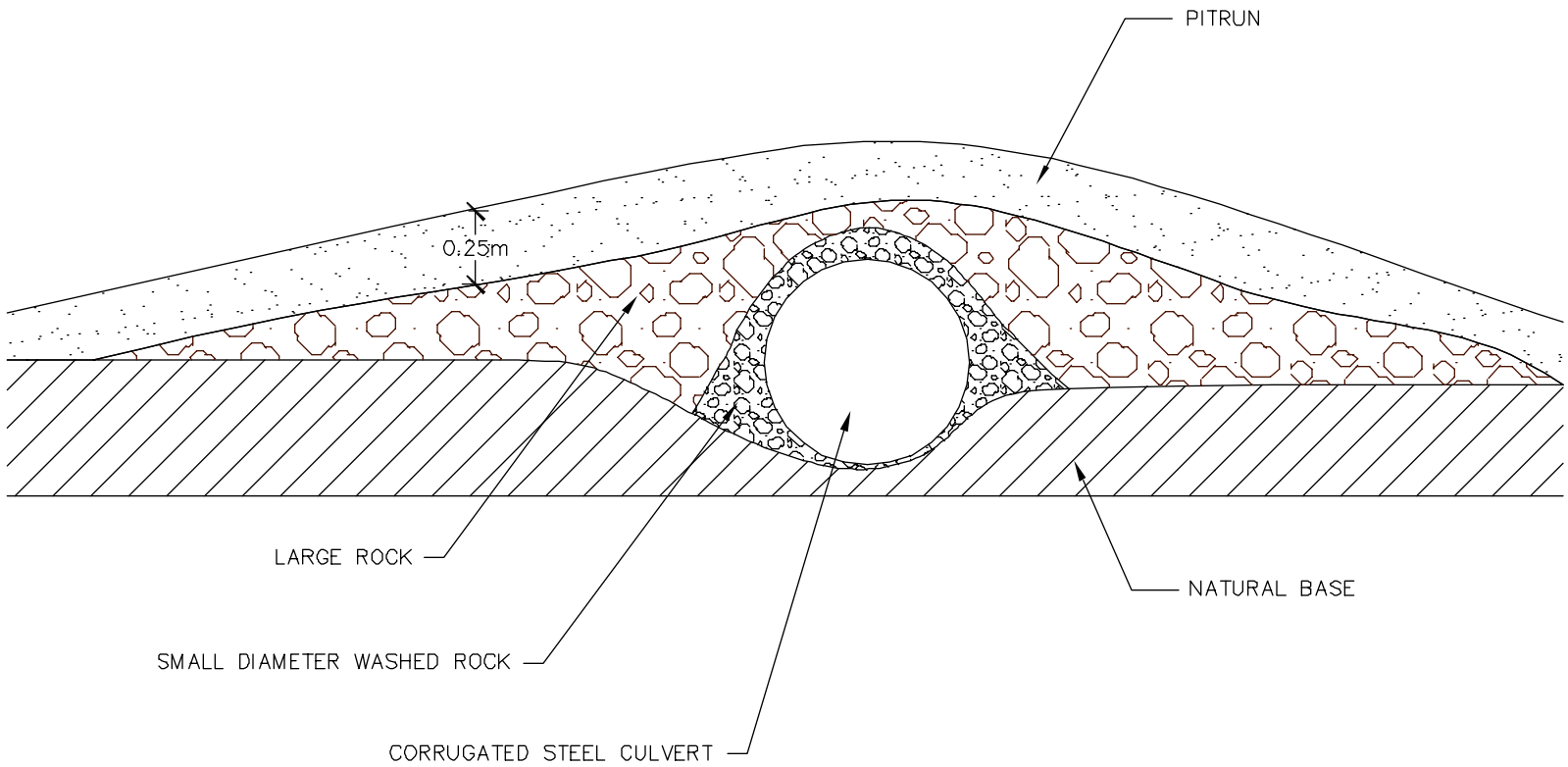

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Jacques Whitford	SCALE: N.T.S. DATE: 18/11/05 DRAWN BY: LDP APPROVED BY:	CLIENT : TITLE : HAMLET OF RANKIN INLET **TYPICAL CULVERT INSTALLATION DETAIL**	DRAWING NO. **6**

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APPENDIX B

Water Crossing Data Sheets

Watercourse Information

Project and Location Information	
Project No.	1000465
Date	24-Sep-05
Watercourse Name	#1
Draining from	
Draining to	
Proposed Construction	Culvert
GPSCoordinates	N62 50.843
	W 92 12.655
GPS Waypoint #	13
Topographic Map No.	
General Location	First Crossing after height of land
Length Assessed Upstream (m)	10 m
Length Assessed Downstream (m)	10m

Characteritsics at Crossing	
Navigable	No
Channel width	0.5 m
Wetted area	1.5m
Depth	0.3m
Substrate	Fine soils, boulders
Drainage Area	

General Information	
Terrain Description	Flat, fine wet soils, some boulders
Right Bank (mateial, slope, condition)	Flat, eroded and muddy
Left Bank (material, slope, condition)	Flat, eroded and muddy
Proposed Structure (Drainage)	Culvert
Proposed Construction Materials	As per typical Crossing Cross-section drawing
Material volumes	TBD
Monitoring	

Xing Fisheries	
Fish Habitat?	
Drains from Fish Habitat	No
Drains to Fish Hab	Yes
Distance to Fish Hab	120 m
Comments	Drainage overland through poorly defined channel(s) and well vegetated terrain

Downstream Fisheries	
Stream Characteristics between Xing and Fish Habitat	
Slope	<1%
Distance	120
Contributing drainages	overland

Photo Record	
1	Looking upstream
2	Looking downstream
3	Looking back across crossing
4	Looking forward across crossing
5	
6	

Description of Crossing Site

First crossing of proposed trail after entering lower area past height of land. Crossing flows throughout openwater season. Stream poorly defined and banks eroded at current trail crossing resulting in some ponding of water.

Watercourse Information

Project and Location Information	
Project No.	1000465
Date	24-Sep-05
Watercourse Name	#2
Draining from	
Draining to	
Proposed Construction	Culvert
GPSCoordinates	N 62 51.099
	W 92 14.306
GPS Waypoint #	16
Topographic Map No.	
General Location	
Length Assessed Upstream (m)	5m
Length Assessed Downstream (m)	5m

Characteritsics at Crossing	
Navigable	No
Channel width	0.5 m
Wetted area	1.5m
Depth	0.2-0.3m
Substrate	Fine soil, few boulders
Drainage Area	

General Information	
Terrain Description	Flat, fine wet soils, few boulders
Right Bank (mateial, slope, condition)	Flat, eroded and muddy
Left Bank (material, slope, condition)	Flat, eroded and muddy
Proposed Structure (Drainage)	Culvert
Proposed Construction Materials	As per typical Crossing Cross-section drawing
Material volumes	TBD
Monitoring	
Mitigation- flow	Yes
Mitigation -Fisheries	No

Xing Fisheries	
Fish Habitat?	
Drains from Fish Habitat	No, is funnel for overland drainage
Drains to Fish Hab	?
Distance to Fish Hab	25 m to Lake A
Comments	Drainage overland through ponded water created by trail erosion

Downstream Fisheries	
Stream Characteristics between Xing and Fish Habitat	
Slope	<1%
Distance	25m
Contributing drainages	None

Photo Record	
1	Looking upstream
2	Looking downstream
3	Looking back across crossing
4	Looking forward across crossing
5	
6	

Description of Crossing Site

Typical poorly defined overland drainage, flows throughout season. Trail use has created ponding and further spread out flow and likely contributing to sedimentation of waters. Limited flows observed.

Watercourse Information

Project and Location Information	
Project No.	1000465
Date	24-Sep-05
Watercourse Name	#3
Draining from	Small Lake s.of L fish Lake
Draining to	Larger Lake
Proposed Construction	Culvert
GPSCoordinates	N 62 51.055
	W 92 15.207
GPS Waypoint #	18
Topographic Map No.	
General Location	
Length Assessed Upstream (m)	5m
Length Assessed Downstream (m)	10m

Characteritsics at Crossing	
Navigable	No
Channel width	1m
Wetted area	2m
Depth	0.3m
Substrate	Boulders, interspersed with fine soils.
Drainage Area	

General Information	
Terrain Description	Flat, low boulder area, interspersed with fine soils
Right Bank (mateial, slope, condition)	boulders, fine soil, well vegetated
Left Bank (material, slope, condition)	boulders, fine soil, well vegetated
Proposed Structure (Drainage)	Culvert
Proposed Construction Materials	As per typical Crossing Cross-section drawing
Material volumes	TBD
Monitoring	

Xing Fisheries	
Fish Habitat?	
Drains from Fish Habitat	None
Drains to Fish Hab	Yes
Distance to Fish Hab	100m
Comments	Drainage overland through ponded water created by trail erosion

Downstream Fisheries	
Stream Characteristics between Xing and Fish Habitat	
Slope	1-2%, increasing downstream
Distance	100m
Contributing drainages	None

Photo Record	
1	Looking upstream
2	Looking downstream
3	Looking back across crossing
4	Looking forward across crossing
5	
6	

Description of Crossing Site

Well defined channel at crossing, relatively flat approaches, little widening of trail at crossing. Surrounding terrain, including downstream is well vegetated.

Watercourse Information

Project and Location Information	
Project No.	1000465
Date	24-Sep-05
Watercourse Name	#4
Draining from	C
Draining to	D
Proposed Construction	Culvert
GPSCoordinates	N 62 51.227
	W 92 17.217
GPS Waypoint #	20
Topographic Map No.	
General Location	
Length Assessed Upstream (m)	5m
Length Assessed Downstream (m)	10m

Characteritsics at Crossing	
Navigable	No
Channel width	0.3m
Wetted area	2.5m
Depth	0.2m
Substrate	Boulders, interspersed with fine soils.
Drainage Area	

General Information	
Terrain Description	Flat, on higher ground than surrounding terrain, boulders with some fines
Right Bank (mateial, slope, condition)	rocks and fine soils
Left Bank (material, slope, condition)	rocks and fine soils
Proposed Structure (Drainage)	Culvert
Proposed Construction Materials	As per typical Crossing Cross-section drawing
Material volumes	TBD
Monitoring	

Xing Fisheries	
Fish Habitat?	
Drains from Fish Habitat	?
Drains to Fish Hab	?
Distance to Fish Hab	300m
Comments	Stream flat at trail crossing, steeper slope downstream, downstream terrain well vegetated

Downstream Fisheries	
Stream Characteristics between Xing and Fish Habitat	
Slope	1-2%, increasing downstream
Distance	300m
Contributing drainages	None

Photo Record	
1	Looking upstream
2	Looking downstream
3	Looking back across crossing
4	Looking forward across crossing
5	
6	

Description of Crossing Site

Low stream flow observed at trail crossing, stream relatively flat at trail crossing but drops steeply downstream to enter a lake near ocean.

Watercourse Information

Project and Location Information	
Project No.	1000465
Date	24-Sep-05
Watercourse Name	#5
Draining from	E
Draining to	F
Proposed Construction	Culvert
GPSCoordinates	N 62 51.668
	W 92 18.666
GPS Waypoint #	22
Topographic Map No.	
General Location	On new trail segment
Length Assessed Upstream (m)	5m
Length Assessed Downstream (m)	10m

Characteritsics at Crossing	
Navigable	No
Channel width	1m
Wetted area	4m
Depth	0.2m
Substrate	Boulders, cobble, gravel
Drainage Area	

General Information	
Terrain Description	Flat, rocky with fine soils
Right Bank (mateial, slope, condition)	Flat, fine soils, rocks, well vegetated
Left Bank (material, slope, condition)	Flat, fine soils, rocks, well vegetated
Proposed Structure (Drainage)	Culvert
Proposed Construction Materials	As per typical Crossing Cross-section drawing
Material volumes	TBD
Monitoring	

Xing Fisheries	
Fish Habitat?	
Drains from Fish Habitat	?
Drains to Fish Hab	?
Distance to Fish Hab	150m
Comments	

Downstream Fisheries	
Stream Characteristics between Xing and Fish Habitat	
Slope	1%
Distance	150
Contributing drainages	None

Photo Record	
1	Looking upstream
2	Looking downstream
3	Looking back across crossing
4	Looking forward across crossing
5	
6	

Description of Crossing Site

Crossing immediately adjacent to Lake E (upstream). Crossing is flat and has been widened and eroded due to trail use. Downstream of current crossing, channel narrows cosiderably and banks are well vegetated and not eroded.

Watercourse Information

Project and Location Information	
Project No.	1000465
Date	24-Sep-05
Watercourse Name	#6
Draining from	G
Draining to	I
Proposed Construction	Culvert
GPSCoordinates	N 62 51.715
	W 92 19.764
GPS Waypoint #	25
Topographic Map No.	
General Location	
Length Assessed Upstream (m)	5m
Length Assessed Downstream (m)	5m

Characteritsics at Crossing	
Navigable	No
Channel width	0.5m
Wetted area	1m
Depth	0.3m
Substrate	Boulders, cobble, gravel
Drainage Area	

General Information	
Terrain Description	Flat, rocky with fine soils
Right Bank (mateial, slope, condition)	Flat, fine soils, rocks, well vegetated
Left Bank (material, slope, condition)	Flat, fine soils, rocks, well vegetated
Proposed Structure (Drainage)	Culvert
Proposed Construction Materials	As per typical Crossing Cross-section drawing
Material volumes	TBD
Monitoring	

Xing Fisheries	
Fish Habitat?	
Drains from Fish Habitat	?
Drains to Fish Hab	?
Distance to Fish Hab	200m
Comments	

Downstream Fisheries	
Stream Characteristics between Xing and Fish Habitat	
Slope	1%
Distance	200m
Contributing drainages	None

Photo Record	
1	Looking upstream
2	Looking downstream
3	Looking back across crossing
4	Looking forward across crossing
5	
6	

Description of Crossing Site

Current crossing immediately downstream of lake and is widened and eroded as a result of trail use. Two drainage channels emerge from widened ponded area at trail crossing, conerving to well defined channel 25-30 m downstream of lake.

Watercourse Information

Project and Location Information	
Project No.	1000465
Date	24-Sep-05
Watercourse Name	#7
Draining from	J
Draining to	K
Proposed Construction	Culvert
GPSCoordinates	N 62 52.037
	W 92 24.747
GPS Waypoint #	29
Topographic Map No.	
General Location	
Length Assessed Upstream (m)	5m
Length Assessed Downstream (m)	20m

Characteritsics at Crossing	
Navigable	No
Channel width	1m
Wetted area	1m
Depth	0.3m
Substrate	Boulders, cobble
Drainage Area	

General Information	
Terrain Description	Flat, rocky with fine soils
Right Bank (mateial, slope, condition)	Flat, fine soils, rocks, well vegetated
Left Bank (material, slope, condition)	Flat, fine soils, rocks, well vegetated
Proposed Structure (Drainage)	Culvert
Proposed Construction Materials	As per typical Crossing Cross-section drawing
Material volumes	TBD
Monitoring	

Xing Fisheries	
Fish Habitat?	
Drains from Fish Habitat	?
Drains to Fish Hab	?
Distance to Fish Hab	250m
Comments	

Downstream Fisheries	
Stream Characteristics between Xing and Fish Habitat	
Slope	1%
Distance	50m to small ponds, total of 250m to larger lake (Di
Contributing drainages	Some overland flow joins downstream channel before entering larger lake

Photo Record	
1	Looking upstream
2	Looking downstream
3	Looking back across crossing
4	Looking forward across crossing
5	
6	

Description of Crossing Site

Drainage from Lake where Friendship Centre Cabins are located. No well defined trail and therefore banks are not eroded and channel drainaing from lake is well defined and in good condition. Greatest flow velocity of all channels on route.

Watercourse Information

Project and Location Information	
Project No.	1000465
Date	24-Sep-05
Watercourse Name	8
Draining from	L
Draining to	M
Proposed Construction	Culvert
GPSCoordinates	N 62 52.252
	W 92 24.097
GPS Waypoint #	31
Topographic Map No.	
General Location	
Length Assessed Upstream (m)	8m
Length Assessed Downstream (m)	15m

Characteritsics at Crossing	
Navigable	No
Channel width	0.6m
Wetted area	0.6m
Depth	0.2m
Substrate	Boulders, cobble
Drainage Area	

General Information	
Terrain Description	Flat, rocky with fine soils, well vegetated
Right Bank (mateial, slope, condition)	Steep, fine soils, rocks, well vegetated
Left Bank (material, slope, condition)	Steep, fine soils, rocks, well vegetated
Proposed Structure (Drainage)	Culvert
Proposed Construction Materials	As per typical Crossing Cross-section drawing
Material volumes	TBD
Monitoring	

Xing Fisheries	
Fish Habitat?	
Drains from Fish Habitat	?
Drains to Fish Hab	?
Distance to Fish Hab	300m
Comments	

Downstream Fisheries	
Stream Characteristics between Xing and Fish Habitat	
Slope	1-2%
Distance	300m
Contributing drainages	Likely some additional overland flow contributing to channel before reaching lake ds.

Photo Record	
1	Looking upstream
2	Looking downstream
3	Looking back across crossing
4	Looking forward across crossing
5	
6	

Description of Crossing Site

Well defined narrow channel and like # 7, no developed trail or crossing in area. Second very similar sized channel exits lake 10m further along proposed route and joins assessed channel approximately 20 m downstream of lake. New crossing should be built 25-30 m downstream of lake where the two channels converge.

Watercourse Information

Project and Location Information	
Project No.	1000465
Date	24-Sep-05
Watercourse Name	9
Draining from	N
Draining to	O
Proposed Construction	Culvert
GPSCoordinates	N 62 52.690
	W 92 24.378
GPS Waypoint #	33
Topographic Map No.	
General Location	
Length Assessed Upstream (m)	10m
Length Assessed Downstream (m)	20m

Characteritsics at Crossing	
Navigable	No
Channel width	1.3m
Wetted area	1.3m
Depth	0.4m
Substrate	Fine silt, sand, some cobbles
Drainage Area	

General Information	
Terrain Description	Fine soils, sands and some boulders and cobbles
Right Bank (mateial, slope, condition)	Flat, moderate slope fine soils and sand
Left Bank (material, slope, condition)	Flat, moderate slope fine soils and sand
Proposed Structure (Drainage)	Culvert
Proposed Construction Materials	As per typical Crossing Cross-section drawing
Material volumes	TBD
Monitoring	

Xing Fisheries	
Fish Habitat?	
Drains from Fish Habitat	Yes
Drains to Fish Hab	Yes
Distance to Fish Hab	0m
Comments	Fish - Stickleback observed in stream immediately downstream of current crossing

Downstream Fisheries	
Stream Characteristics between Xing and Fish Habitat	
Slope	<1%
Distance	0m
Contributing drainages	

Photo Record	
1	Looking upstream
2	Looking downstream
3	Looking back across crossing
4	Looking forward across crossing
5	
6	

Description of Crossing Site

Wide poorly defined channel at crossing immediately downstream of pond. Crossing assessed approximately 10 m downstream of pond where channel better defined and where new ccrossing should be installed.

Watercourse Information

Project and Location Information	
Project No.	1000465
Date	24-Sep-05
Watercourse Name	10
Draining from	
Draining to	
Proposed Construction	Culvert
GPSCoordinates	N 62 52.950
	W 92 25.694
GPS Waypoint #	34
Topographic Map No.	
General Location	
Length Assessed Upstream (m)	5m
Length Assessed Downstream (m)	10m

Characteritsics at Crossing	
Navigable	No
Channel width	0.3m
Wetted area	4.0m
Depth	0.2m
Substrate	Fine silt and sand
Drainage Area	

General Information	
Terrain Description	Fine soils, sands and some boulders
Right Bank (mateial, slope, condition)	Gentle slope, fine soil and sand
Left Bank (material, slope, condition)	Gentle slope, fine soil and sand
Proposed Structure (Drainage)	Culvert or small pipe
Proposed Construction Materials	As per typical Crossing Cross-section drawing
Material volumes	TBD
Monitoring	

Xing Fisheries	
Fish Habitat?	
Drains from Fish Habitat	No
Drains to Fish Hab	?
Distance to Fish Hab	?
Comments	Poorly defined channel, largely overland flow above and below trail crossing

Downstream Fisheries	
Stream Characteristics between Xing and Fish Habitat	
Slope	<1%
Distance	?
Contributing drainages	

Photo Record	
1	Looking upstream
2	Looking downstream
3	Looking back across crossing
4	Looking forward across crossing
5	
6	

Description of Crossing Site

Drains overland catchment area not from a waterbody. Crossing is a wide wet area of standing water with limited actual flow

Watercourse Information

Project and Location Information	
Project No.	1000465
Date	24-Sep-05
Watercourse Name	11
Draining from	
Draining to	
Proposed Construction	Culvert
GPSCoordinates	N 62 52.950
	W 92 25.694
GPS Waypoint #	35
Topographic Map No.	
General Location	
Length Assessed Upstream (m)	15m
Length Assessed Downstream (m)	10m

Characteritsics at Crossing	
Navigable	No
Channel width	0.3m
Wetted area	1m
Depth	0.1-0.2
Substrate	Cobbles, gravel, sand
Drainage Area	

General Information	
Terrain Description	Fine soils, sands and some boulders
Right Bank (mateial, slope, condition)	Gentle slope, fine soil, sand and some rocks
Left Bank (material, slope, condition)	Gentle slope, fine soi, sand and some rock
Proposed Structure (Drainage)	Culvert
Proposed Construction Materials	As per typical Crossing Cross-section drawing
Material volumes	TBD
Monitoring	

Xing Fisheries	
Fish Habitat?	
Drains from Fish Habitat	?
Drains to Fish Hab	?
Distance to Fish Hab	100m
Comments	Stream drains through low slope well vegetated terrain before reaching lake 100m downgradient

Downstream Fisheries	
Stream Characteristics between Xing and Fish Habitat	
Slope	2-3%
Distance	?
Contributing drainages	

Photo Record	
1	Looking upstream
2	Looking downstream
3	Looking back across crossing
4	Looking forward across crossing
5	
6	

Description of Crossing Site

Small flow out of small lake upstream of crossing to larger lake approximately 100 m downgradient and estimated 10 m lower in elevation. Channel varies from width of 2m at current crossong to closer to less than 1 m immediately downstream of crossing.

Watercourse Information

Project and Location Information	
Project No.	1000465
Date	24-Sep-05
Watercourse Name	12
Draining from	
Draining to	
Proposed Construction	Culvert
GPSCoordinates	N62 53.332
	W 92 27.821
GPS Waypoint #	36
Topographic Map No.	
General Location	
Length Assessed Upstream (m)	5m
Length Assessed Downstream (m)	10m

Characteritsics at Crossing	
Navigable	No
Channel width	0.3m
Wetted area	1.5m
Depth	0.1m
Substrate	Cobbles, gravel, sand
Drainage Area	

General Information	
Terrain Description	Fine soils, sands and some boulders
Right Bank (mateial, slope, condition)	Gentle slope, fine soil, sand and some cobbles
Left Bank (material, slope, condition)	Gentle slope, fine soil, sand and some cobbles
Proposed Structure (Drainage)	Culvert or small pipe
Proposed Construction Materials	As per typical Crossing Cross-section drawing
Material volumes	TBD
Monitoring	

Xing Fisheries	
Fish Habitat?	
Drains from Fish Habitat	?
Drains to Fish Hab	?
Distance to Fish Hab	100m
Comments	Stream drains through low slope well vegetated terrain before reaching lake 100m downgradient

Downstream Fisheries	
Stream Characteristics between Xing and Fish Habitat	
Slope	2-3%
Distance	?
Contributing drainages	

Photo Record	
1	Looking upstream
2	Looking downstream
3	Looking back across crossing
4	Looking forward across crossing
5	
6	

Description of Crossing Site

Crossing approximately 30m downstream of pond and another pond located approximately 100 m downstream of crossing. Limited flow observed during site visit. Channel downstream of crossing narrows and well vegetated. Appears channel may divert further downstream with some overland flow.

Watercourse Information

Project and Location Information	
Project No.	1000465
Date	24-Sep-05
Watercourse Name	13
Draining from	
Draining to	
Proposed Construction	Culvert
GPSCoordinates	N62 53.332
	W 92 27.821
GPS Waypoint #	37
Topographic Map No.	
General Location	
Length Assessed Upstream (m)	5m
Length Assessed Downstream (m)	25m

Characteritsics at Crossing	
Navigable	No
Channel width	0.3m
Wetted area	0.4m
Depth	0.2m
Substrate	Boulders
Drainage Area	

General Information	
Terrain Description	Boulders
Right Bank (mateial, slope, condition)	Relatively flat, large boulders
Left Bank (material, slope, condition)	Slightly sloped, boulders
Proposed Structure (Drainage)	Culvert
Proposed Construction Materials	As per typical Crossing Cross-section drawing
Material volumes	TBD
Monitoring	

Xing Fisheries	
Fish Habitat?	
Drains from Fish Habitat	?
Drains to Fish Hab	Dianne River
Distance to Fish Hab	40m
Comments	Steep gradient immediately downstream of trail crossing

Downstream Fisheries	
Stream Characteristics between Xing and Fish Habitat	
Slope	1-2% at crossing, increasing significantly
Distance	40m
Contributing drainages	

Photo Record	
1	Looking upstream
2	Looking downstream
3	Looking back across crossing
4	Looking forward across crossing
5	
6	

Description of Crossing Site

Trail is very rocky and difficult to navigate at this crossing, Travellers travel across top of boulders with top of stream approximately 0.3 m below top of boulders and only visible in some locations.

Watercourse Information

Project and Location Information	
Project No.	1000465
Date	24-Sep-05
Watercourse Name	14
Draining from	
Draining to	
Proposed Construction	Culvert
GPSCoordinates	
GPS Waypoint #	Not taken
Topographic Map No.	
General Location	Main outflow of lake at waypoint 37
Length Assessed Upstream (m)	5m
Length Assessed Downstream (m)	10m

Characteritsics at Crossing	
Navigable	No
Channel width	1.3m
Wetted area	1.3m
Depth	0.3m
Substrate	Fine soils, cobbles
Drainage Area	

General Information	
Terrain Description	Fine soils, well vegetated, no developed trail
Right Bank (mateial, slope, condition)	Flat, well vegetated, fine soils, no developed trail
Left Bank (material, slope, condition)	Flat, well vegetated, fine soils, no developed trail
Proposed Structure (Drainage)	Culvert
Proposed Construction Materials	As per typical Crossing Cross-section drawing
Material volumes	TBD
Monitoring	

Xing Fisheries	
Fish Habitat?	
Drains from Fish Habitat	?
Drains to Fish Hab	Dianne River
Distance to Fish Hab	150m
Comments	Appears to be main drainage from the lake, stream gradient fairly flat, on high ground before dropping down to Dianne River

Downstream Fisheries	
Stream Characteristics between Xing and Fish Habitat	
Slope	1% at Crossing
Distance	150m
Contributing drainages	

Photo Record	
1	
2	
3	
4	
5	
6	

Description of Crossing Site

This stream was not assessed in detail as it was unsure if trail will actually pass this way. Stream appears to be main drainage from the lake. A strong south east wind was observed to be pushing the lake water into the stream so it may have appeared that the stream was flowing more than usual. There was no developed trail in this area, hence the channel was narrow and banks were in natural condition and no erosion was present. Further past the crossing the route passes through a flat wet area, possibly some drainage from the lake but no discinernable flow was observed. The stream channel was consistent from the exit of the lake to 15m downstream.

APPENDIX C

Photographs

Photo 1 – Start of Trail on west side of New Dump Road

Photo 2- Trail Section located on dry granular soils

Photo 3- Trail on dry granular soils and large rocks

Photo 4 – Trail through rock fields

Photo 5 – Trail through fine grained soils, some embedded rocks and standing water

Photo 6 – Wet area in fine grained soils. Note trail widening.

Photo 7 – Widened Trail Crossing at Stream #1

Photo 8 – Undisturbed bank and channel downstream of Stream # 8. Crossing structure to be installed in this location.

APPENDIX D

Preliminary Environmental Scan

APPENDIX A
PRELIMINARY ENVIRONMENTAL SCAN FORM

Preliminary Environmental Information Scan Form

Request for Proposals

Nunavut Community Access Trail for ATV's Prospective Analysis/Preliminary Environmental Scan

The following Preliminary Environmental Scan Form must be completed by a SHIP applicant to Provide an indication as to the potential environmental impacts associated with a proposed SHIP project. Please use additional pages when extra space is needed, noting the appropriate headings and subheadings.

Project Location:	RANKIN INLET, NU
Project Title:	UPGRADING DIANNE RIVER TRAIL
Estimated Project Cost:	
Project Number:	
Project Description:	SEE ROUTE
Project Justifications:	

Other Permits & Approvals Required (i.e. Territorial, NIRB, Land & Water Board, building, Municipal,): Yes ☑ No ☐

Specify: NIRB Approval

Drawings Available: Yes ☑ No ☐

Specify:

PROJECT AREA & ECOLOGICAL DESCRIPTION

(Check box where applicable)

Approximate Size of Project Area: 12,000 m² (Square Meters, Hectares etc.)

Soil Type:

Topsoil ☑ Gravel ☑ Sand ☑ Clay ☐ Silt ☐ Sediment ☐

Other ☐ Specify ☐

Depth to Bedrock (in meters if known) - unknown, except where at surface

Vegetation Type:

Trees ☐ Grass ☑ Shrubs ☑ Submerged/Emergent ☐

No Vegetation ☐ Other ☐ Specify:

Terrestrial and Aquatic Wildlife (Specify):
Caribou, fox, grizzly bear.
Ducks, geese, raptors.

Surface Water (on-site or nearby if applicable):

Natural Watercourses (rivers, streams, lakes, ponds etc.)	☑	Storm Water Drainage System (existing & Proposed)	☐
Marine	☐	Wetland Area (swamp, marsh etc.)	☐
Other	☐		

Specify: _____

Current Land Use:

Undeveloped/Natural Area	☐	Specify: _____
Agricultural Land	☐	Specify: _____
Residential	☐	Specify: _____
Recreational	☑	Specify: Undeveloped except for trail + some cabins
Industrial	☐	Specify: _____
Airport Use	☐	Specify: _____

Adjacent Land Use:

Undeveloped/Natural Area	☑	Specify: _____
Agricultural Land	☐	Specify: _____
Residential	☐	Specify: _____
Recreational	☐	Specify: _____
Industrial	☐	Specify: _____
Land use Plan	☐	Specify: _____
Airport Use	☐	Specify: _____

HAZARDOUS PRODUCT – MATERIALS STORAGE LIST

Indicate any of the following materials that will be stored or use by this operation:

Fuel (gasoline, jet fuel, heating fuel etc.)	☑
Propane	☐
Oils (engine oils, transmission oil waste oil etc.)	☑
Metal Plating Materials	☐
Maintenance Fluids (antifreeze, hydraulic fluids, brake fluids, etc.)	☐
Degreasers, Solvents, Cleaners, Paint Removers, Strippers	☐
Pesticides	☐
Sanitary Cleaning Products	☐
Other	☐

Specify: Fuels and oils will be used in equipment working on trail. No bulk fuel storage on site.

ASSOCIATED ACTIVITIES

Indicate the activities which will be associated with this project:

Site Preparation Phase Activities:

Access Trail Construction	☑	**Drainage or Stream Alteration**	☐
Site Clearing	☐	**Vegetation Control**	☐
Burning	☐	**Excavation**	☐
Other	☐	**Land Filling**	☐

Specify: _____

Construction Phase Activities:

Temporary Roads	☐	**Ditching**	☐
Topsoil Stripping	☐	**Landscaping**	☐
Compacting	☐	**Stumping & Grubbing**	☐
Blasting/Drilling	☐	**Gravel Crushing/Washing**	☐
Earth Disposal	☐	**Grading (cut/filling)**	☐
Stream Crossing	☑	**Solid Waste Disposal**	☐
Dewatering	☐	**Fencing**	☐
Stream Channelling	☐	**Painting/Paint Removal**	☐
Installation of Petroleum Storage Tanks (ASTs/USTs)	☐	**Culvert Installation**	☑
Erosion Control	☐	**Utilities**	☐
Asphalting/Concreting	☐	**Sewage/Disposal Treatment**	☐
Equipment Use	☐	**Electrical Equipment Disposal**	☐
Other	☐	**Industrial Wastewater Disposal**	☐

Specify: _____

Aircraft Maintenance	☐	**Sewage Disposal/Treatment**	☐
De/Anti-icing	☐	**Storage of Hazardous Goods**	☐
Pedestrian Movement	☐	**Equipment Maintenance**	☐

Snow Removal/Disposal	☐	Fuel Storage	☐
Other	☐		

Specify: _____

_____

Decommissioning and Abandonment Phase Activities:

Temporary Roads	☐	Landscaping	☐
Topsoil Stripping	☐	Stumping & Grubbing	☐
Compacting	☐	Gravel Crushing/Washing	☐
Blasting/Drilling	☐	Grading (cut/filling)	☐
Earth Disposal	☐	Solid Waste Disposal	☐
Stream Channelling	☐	Culvert Installation	☐
Erosion Control	☐	Utilities	☐
Equipment Use	☐	Sewage/Disposal Treatment	☐
Ditching	☐	Electrical Equipment Disposal	☐
Other	☐	Industrial Wastewater Disposal	☐

Specify: _____

_____

ENVIRONMENTAL CONTROL FACILITIES TO BE INSTALLED

Floor Drains	☐	Oil/Water Separators	☐
Wash Sinks	☐	Petroleum Storage Tanks (ASTs/USTs)	☐
Waste Sumps	☐	Noise Attenuation	☐
Grease Traps	☐	Environmental Management Plans	☐
Emission Controls	☐	Environmental Emergency Contingency Plan	☐
Other	☐		

Specify: _____

_____

_____

MIGITATIONS

Identify the activity under the appropriate phase (site preparation, construction, operation and Maintenance, decommissioning) and describe proposed mitigations to be implemented and part Of this project:

- Avoidance of peregrine nest sites
- No construction activity while peregrine nests occupied.
- Installation of culverts to facilitate natural drainage
- Restriction of all construction activity to trail alignment

_____

_____

Potential Implication on Jurisdictions:

_____

Identify if any Environmentally Sensitive Areas Exist or if there are any Endangered Species:

Trail passes through Peregrine Falcon habit, listed as a Species of Special Concern, under Schedule 3 of Species At Risk Act (SARA)

Additional comment or remarks:

- Mitigation measures proposed to mitigate impacts on Falcons

Complete By/ Proposal Contact: Nick Lawson **Signature:** [signature] **Date:** 07/12/05 (mm/dd/yy)

JACQUES WHITFORD LIMITED P.O. BOX 1680 YELLOWKNIFE, NT, X1A 2P3

Mailing address

867-920-2216

Telephone Number

Attachments: Please include as attachments, any relevant project information, such as a Project Proposed Work Plan: