



BLUEFOX
ENGINEERING

Statement of **Qualifications**

To the Reader

This document presents a general overview of the qualifications and services offered by BlueFox Engineering Inc. (BlueFox).

We offer a full suite of Project Management, Engineering, Design, Environmental and Construction Management services facilitating trenchless pipeline and conduit crossing projects. We proudly serve the oil & gas, mining, civil, municipal, utility and environmental industries.

Our team is comprised of professional engineers, scientists, technicians and construction experts with extensive and specialized trenchless experience. We actively maintain a working relationship with several additional consulting firms allowing us to provide a broader scope of services while allowing our clients to benefit from the efficiencies of smaller specialist firms, while maintaining one primary point of contact.

We are proud to have provided engineering, consultation and construction support services to numerous projects across Canada.

**Sincerely,
BlueFox Engineering Inc.**

Corporate Introduction

BlueFox has successfully completed over 250,000m of trenchless pipeline engineering and construction for pipeline projects reaching up to 1,541mm (60 Inch) in diameter and crossings exceeding 2,000m in length. Amongst these projects are multiple successfully completed trenchless crossings throughout Canada, North America and Europe.

We have been recognized by Trenchless Technology as one of the Top 50 Trenchless Engineering firms in North America. In addition, our team has received the North American Society for Trenchless Technology Trenchless Project of the Year Award multiple times.

About Us

The BlueFox Engineering team is comprised of professional, technical and construction personnel with extensive experience in trenchless crossing installations. Our commitment to project success is demonstrated throughout our involvement from concept to closeout. We believe in a collaborative approach with stakeholders to deliver crossing solutions tailored to meet our clients' objectives.

Mission Statement

To consistently deliver expert trenchless engineering, consulting and construction management services through the application of knowledge, experience and technology.

Our Core Values

To always be learning, improving and optimizing our services delivery to the industries we serve while upholding the highest standards of professionalism, quality and safety.

Our Vision

To be a trusted service provider regarded for the highest caliber of trenchless engineering.



HORIZONTAL DIRECTIONAL DRILLING

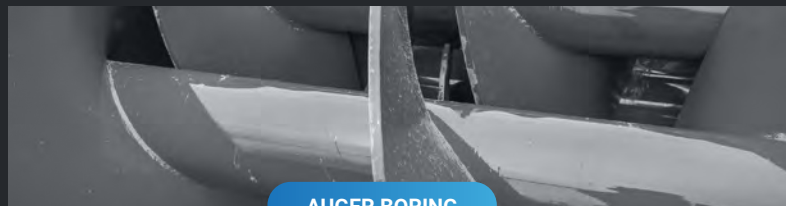


DIRECT PIPE INSTALLATION



MICROTUNNELING

98mm DIAMETER X 38mm WIDE



AUGER BORING



PIPE RAMMING

An aerial photograph of a construction site in a snowy, wooded area. Several large cranes are positioned on the ground, and a long, dark line (likely a pipeline or conduit) stretches across the landscape. The scene is covered in snow, and the trees are bare, suggesting a winter setting. The overall image has a blue tint.

04

Our Services

BlueFox Engineering has the comprehensive expertise to support your trenchless crossing projects. We provide planning, investigation, engineering, design, tendering and construction management services for pipeline and conduit crossings of every scale.

Our integrated approach ensures optimization of costs, schedule and resources from concept to execution by aligning the goals of environmental, geotechnical, engineering and construction services.

01

Project Management

Utilizing the fundamentals of the Project Management Institute, we ensure the proper processes are in place to plan, execute, monitor, and control projects of any size.

02

Planning & Investigation

We work with project stakeholders to evaluate the feasibility, economics, and constraints of a trenchless crossing from the beginning, allowing us to develop a tailored execution plan for engineering design.

03

Geotechnical & Environmental

Through strategic alliances with our industry colleagues, we are able to offer geotechnical investigation and environmental services that complement our trenchless expertise.

04

Engineering Design

Using engineering processes on the leading edge of the trenchless industry we develop effective solutions to each project.

05

Tendering & Procurement

We support projects to acquire the appropriate resources to successfully execute a trenchless crossing.

06

Construction Management

Our construction services team provides onsite construction management and trenchless inspection during the execution of crossing projects.



06

Crossings Portfolio

Personnel at BlueFox Engineering have been involved in the design and/or execution of several thousand trenchless crossing projects. The following highlights some of the significant crossings within our portfolio.

ALBERTA

- North Saskatchewan River
- Athabasca River
- Kakwa River
- Smoky River
- Bow River (Calgary)
- O'Chiese River
- Hay River
- Elbow River (Calgary)
- Wapiti River
- Cutbank River
- Red Deer River
- Wildhay River
- Waskahigan River
- McLeod River
- Brazeau River
- Nordegg River
- LaBieche River
- Gregoire River
- Clearwater River
- Christina River
- May River
- Boulder Creek
- Patterson Creek
- Prentice Creek
- Fish Creek (Calgary)
- Big Mountain Creek
- Bald Mountain Creek
- Deep Valley Creek
- Wanyandie Creek
- Lemming Lake
- Jackfish Creek
- Wolf Creek
- 162 Avenue (Calgary)
- 17 Avenue (Chestermere)
- Highway 1A
- Highway 63
- Highway 2 (Deerfoot Trail Calgary)
- SW Calgary Ring Road
- Highway 22X (Calgary)
- Lesser Slave Lake
- Frog Lake
- South Saskatchewan River
- Sheep River

BRITISH COLUMBIA

- Beatton River
- Pouce Coupe River
- Murray River
- Kitimat River
- Sukunka River
- Burnt River
- Parsnip River
- Crooked River
- Salmon River
- Sikanni Chief River
- Buckinghorse River
- Septimus River
- Kiskatinaw River
- Hay River
- Farrell Creek
- Ground Birch Creek
- Chief's Cabin Creek
- Cromie Creek
- Kobes Creek
- Julianne Creek
- Wapistan Creek
- Atick Creek
- Halfway River
- Cameron River
- Highway 97
- Fraser River
- Peace River
- Crocker Creek
- Pine River

SASKATCHEWAN

- South Saskatchewan River
- Moosejaw River
- Greenbush River
- Qu-Apelle River
- CN & CP Railways
- Gull Lake
- Beaver Creek
- Melfort Creek
- Pipestone Creek

MANITOBA

- Winnipeg River
- Assiniboine River
- Pipestone River
- West Jackson River
- West Stony River
- Souris River
- Highway 100 (Winnipeg)

ONTARIO

- Madawaska River
- Rideau River
- Rivière Delisle

NEW BRUNSWICK

- Petite Rivière Iroquois
- Rivière Verte
- Grande Riviere
- Tobique River
- Salmon River
- Hammond River
- Mispec River
- Black River
- Miramichi River
- Coal Creek
- Long Creek
- Kennebecasis River

QUEBEC

- Rivière des Outaouais
- Rivière des Mille Îles
- Rivière des Prairies
- Rivière Madawaska
- Trois Rivière
- Rivière Assomption
- Rivière Jacques Cartier
- Rivière Raisin
- Rivière du Loup
- Rivière Chicot
- Rivière Maskinonge
- Rivière Beaurivage
- Rivière Bras-Saint Nicolas
- Rivière Bayonne
- Rivière Saint Maurice
- Rivière Batiscan
- Rivière du Nord
- Rivière du Sud
- Rivière Etchemin
- Rivière Saint Anne
- Rivière Chaudière
- Trois Saumon
- Rivière Ouelle
- Grande Rivière
- Rivière Iroquois

INTL.

- United States
- Mexico
- Serbia

**Numerous creeks,
roads, and railways.**

08

Trenchless Technology

Trenchless construction requires technology such as Microtunnelling, Horizontal Directional Drilling (HDD), Pipe Ramming, Auger Boring, Direct Pipe Installation and other methods for the installation of pipelines, conduits and cables below the ground with minimal excavation, reduced environmental impact and little surface disruption.



Auger Boring, often referred to as “jack and bore”, is a method of installation that simultaneously jacks casing while rotating helical augers within the casing to remove cuttings. Hydraulic jacks located on the bore machine at the launch shaft provide the thrust that advance the casing along the crossing alignment.



Horizontal Directional Drilling, or **HDD** as it is commonly referred to, is a surface launched, steerable trenchless method whereby a pilot hole is drilled along a designed trajectory. Pressurized drilling fluid within the borehole conveys the cuttings to surface. Once the pilot hole is complete, the borehole is enlarged by passing a reaming tool through the borehole until the desired diameter is reached.



Microtunneling is a remotely-controlled, continuously supported pipe jacking method. Soil excavation takes place in a closed loop by way of infusing the soil with slurry at the boring machine face. The machine is shaft launched and advanced with hydraulic jacks.



Direct Pipe combines advantages of microtunneling and HDD technology. In a single step, a prefabricated pipeline can be installed, and the required borehole diameter can be excavated simultaneously. The boring machine and pipeline are advanced using a thruster which clamps around the circumference of the pipeline.



Pipe Ramming is used in a wide variety of soil types including gravel, cobble or sand. A pneumatic hammer is attached to the back of the casing pipe and driven through the material at any angle: from horizontal to vertical. The material is cleaned out of the pipe using an auger boring machine.

Health, Safety & Environmental

BlueFox Engineering is committed to conducting its activities in a manner that will safeguard the health and safety of employees, subcontractors, clients, the public, and the environment in which we operate.

HEALTH & WELLNESS



Our philosophy is to promote the healthy living and wellbeing of our employees through education and activities that will support positive lifestyles. We encourage a healthy work environment that results in improved productivity and morale throughout the BlueFox organization.

SAFETY



Safety starts with awareness, and awareness starts with each individual team member. By ensuring every member of the BlueFox team has the proper training, resources, and mentality to complete their duties safely, we are improving the safety of everyone around us. The protection of employees, associates, and the public is paramount for every project we undertake.

ENVIRONMENTAL SUSTAINABILITY



BlueFox Engineering encourages environmental sustainability by minimizing the impact that both our daily operations and construction projects have on the planet. By utilizing new technologies and evolving scientific knowledge, we continue to work to minimize our global footprint.

12

Quality Management

BlueFox Engineering is committed to conducting its operations to the highest level of quality standards. Quality is important to us, because we have pride in our work and value our clients.

Quality Management

We strive to provide our clients with deliverables and services which will meet, and even exceed their expectations. We are committed to continuous improvement and have established a Quality Management System which provides a framework for measuring and improving our performance.

Recognized as a quality provider of specialized engineering and construction management services, our policy is to maintain a practical, and comprehensive Quality Management System. This will be central to the delivery of our commitment to services excellence and continuous improvement.

Memberships and Associations



Professional Engineers
Ontario

ENGINEERS
GEOSCIENTISTS
MANITOBA



Project
Management
Institute.



complyworks
a veriforce company



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