

# Services Guide

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## Excavation Contractor

***\*NOTE 1: This information is pulled from credible sources. This information is a guide. Any information used from this guide must be re-contextualized (no copying and pasting). Re-contextualize information incorporating SEO and business specifics.***

***\*NOTE 2: For MCP websites, stick to general information and avoid specifics.***

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# 1. EXCAVATION CONTRACTOR OVERVIEW

## 1.1 GENERAL INFORMATION

- Technically speaking, excavation is simply digging a hole. Clients typically hire excavation contractors to dig out their property as part of a demolition, construction or landscaping project. Excavation contractors will usually have powerful equipment, so almost without exception, they offer a range of services with their equipment. Unlike other verticals, almost every excavation company will offer slightly different services.
- When you visit an excavation contractor, it will typically be “excavation and demolition,” “excavation and construction,” “excavation and hauling/trucking,” etc.
- Companies will refer to **site services** as a way to describe the range of services they can perform on a site.
- Some companies may even do general contracting. This is the overall running of a construction site, including managing the various teams involved in the project.

## 1.2 SEO

Keywords (First Row – BEST, Last Row – LEAST)			
○ Demolition	○ Excavator	○ Trencher	○ Earthworks
○ Grading	○ Dirt Works	○ Site Work	○ Site Preparation
○ Excavating Companies	○ Bulldozing	○ Excavation Contractors	○ Excavator Hire
○ Land Clearing	○ Construction Excavation	○ Grading Excavation	○ Dump Truck Companies
○ Land Excavation	○ Basement Excavation	○ Landscape Excavation	○ Site Excavation

**Note:** a lot of people search for “excavation definition” (and related searches). It’s a popular search but maybe not relevant for trying to sell services.

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### 1.3 EQUIPMENT

<https://en.wikipedia.org/wiki/Excavator>

[https://en.wikipedia.org/wiki/Long\\_reach\\_excavator](https://en.wikipedia.org/wiki/Long_reach_excavator)

[https://en.wikipedia.org/wiki/Skid-steer\\_loader](https://en.wikipedia.org/wiki/Skid-steer_loader)

<https://en.wikipedia.org/wiki/Backhoe>

<https://en.wikipedia.org/wiki/Grader>

Steps	Description
<b>1. Excavators</b>	<ul style="list-style-type: none"><li>○ A.K.A. hydraulic excavators, diggers</li><li>○ Heavy construction equipment consisting of a boom, dipper (or stick), bucket and cab on a rotating platform known as the "house." They move using trucks or wheels.</li><li>○ They can move 360 degrees in the rotating cab, giving operators freedom to move materials around.</li><li>○ Used for digging materials and demolition</li><li>○ Different attachments are available, which can make the excavator suitable for different jobs.</li></ul>
<b>2. Long Reach Excavators / High Reach Excavators</b>	<ul style="list-style-type: none"><li>○ Used for demolition rather than digging. Can reach upper floors or buildings to bring them down in a controlled fashion.</li></ul>
<b>3. Loaders</b>	<ul style="list-style-type: none"><li>○ Used to lift, move and load materials – gravel, dirt, soil, sand, rock, asphalt, and other materials.</li><li>○ Many companies offer a skid-steer loader (see skid-steer section below)</li></ul>
<b>4. Backhoe</b>	<ul style="list-style-type: none"><li>○ Similar to an excavator, with a boom and a bucket, although the bucket faces down/backwards instead of up.</li><li>○ It digs by drawing earth backwards and curling it under and up, rather than lifting it forwards.</li></ul>
<b>5. Bobcat/Skid-Steer Loader</b>	<ul style="list-style-type: none"><li>○ A skid-steer loader is a small loading machine with a bucket (shovel) at the front.</li><li>○ Sometimes referred to by the brand name Bobcat. Not all skid-steer loaders are made by Bobcat, but they're the most visible company, and the name is often used interchangeably with the machine regardless of the brand (as with Band-Aid, Velcro or Kleenex).</li><li>○ Capable of pirouette turns (a stationary, zero-radius turn), which makes them very maneuverable and capable of accessing small or awkward areas of a site. Much smaller than an excavator, so useful when overhead clearance is limited (as when digging a basement under an existing house).</li></ul>

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	<ul style="list-style-type: none"><li>○ They can be used for digging (backhoe are other attachments are available), rough grading, or loading and transporting materials around a worksite.</li></ul>
<b>6. Trencher</b>	<ul style="list-style-type: none"><li>○ Trenchers are trench-digging machines designed to cut through the ground and create a trench for laying pipe or cable, even in tough, rocky soil types.</li><li>○ Some companies sell machines specifically designed for trenching; other companies sell trenching attachments for skid-steers.</li></ul>
<b>7. Grader</b>	<ul style="list-style-type: none"><li>○ A.K.A. a road grader or motor grader. This machine has a long blade designed to create a flat surface during the grading process.</li><li>○ Used in site preparation, getting ready for construction or the paving of a road.</li></ul>

### **1.4 WHY HIRE A PROFESSIONAL EXCAVATION COMPANY?**

<b>Steps</b>	<b>Description</b>
<b>1. Safety</b>	<ul style="list-style-type: none"><li>○ Some companies may have COR/SECOR certification and be recognized by a provincial branch of the Canadian Federation of Construction Safety Associations – <a href="http://www.cfcsa.ca">http://www.cfcsa.ca</a></li><li>○ Excavation work can involve heavy equipment, large amounts of material and deep holes. Can be very hazardous unless done by trained professionals.</li></ul>
<b>2. Machinery</b>	<ul style="list-style-type: none"><li>○ Heavy duty machinery can turn a large site-clearing or landscaping project into a fast and efficient job.</li><li>○ Save time and backbreaking labour by hiring professionals with machines.</li></ul>
<b>3. Permits</b>	<ul style="list-style-type: none"><li>○ Excavation companies will likely be experienced at acquiring necessary permits and locating gas and electric lines so as not to damage area.</li></ul>

## 2. DIGGING

### 2.1 TRENCHING

[http://www.ihsa.ca/pdfs/safety\\_manual/trenching.pdf](http://www.ihsa.ca/pdfs/safety_manual/trenching.pdf)

**General:**

- As it sounds, trenching is digging out a long trench on ditch.
- Trenching refers to excavation where the depth of the hole exceeds the width.
- Trenching is the step before laying pipeline, installing phone cables, sewers, etc.

**Trenching Process:**

[http://www.king.ca/Government/Departments/Building/Documents/27\\_M026.pdf](http://www.king.ca/Government/Departments/Building/Documents/27_M026.pdf)

<http://www.wikihow.com/Excavate-a-Trench>

Steps	Description
<b>1. Plan ditch</b>	<ul style="list-style-type: none"><li>○ Experienced contractors will plan route of trench based on obstacles and soil type.</li><li>○ Plan depth of trench</li></ul>
<b>2. Remove Vegetation/Topsoil</b>	<ul style="list-style-type: none"><li>○ Plants and even some grasses can be removed, set aside and replaced after trenching is complete.</li><li>○ Topsoil (10-20cm, depending on its depth) can be removed and stored separately from the rest of the excavated material. Kept in small heaps to avoid compaction, kept in small piles and away from traffic.</li></ul>
<b>3. Add Necessary Safety Measures While Digging</b>	<ul style="list-style-type: none"><li>○ Shoring – supports for sides of ditch. Cut a bench at the top of the shoring.</li><li>○ Trench boxes – placed in an excavated but unshored trench to protect workers</li><li>○ De-watering – use special equipment to remove the excess water from the soil to keep it stable</li><li>○ Sloping – slope the walls, if space permits it. The angle will depend on soil conditions.</li></ul>
<b>4. Remove Spoil Away from Trench</b>	<ul style="list-style-type: none"><li>○ Spoil is the removed soil</li><li>○ Should be taken away from the trench so that it doesn't get in the way and doesn't cause strain on the trench wall (which can cause collapse)</li></ul>
<b>5. Install Material</b>	<ul style="list-style-type: none"><li>○ Once trench is complete, install the pipeline/cables/etc. that trench was made for</li></ul>

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### 6. Backfill Trench

- Put spoil back into the trench. Can be compacting to reduce settling.
- Replace any removed topsoil and vegetation, do necessary landscaping.

## 2.2 BACKFILLING

### Services/Products under Backfilling:

<http://www.wisegeek.com/what-is-backfill.htm>

<http://blog.armchairbuilder.com/6671/backfilling-your-new-home-foundation/>

### General:

- Backfilling typically means to refill a hole with the same material that was dug out of it.
- Might be new material that has been transported to the site.
- Both environmentally friendly and practical. No need for hailing or synthetics.

Uses for Backfilling	Description
1. Foundations	<ul style="list-style-type: none"><li>○ Using the compacted earth and stone that was excavated in order to create a smooth site for the construction of the building, the backfilling is piled against the finished foundation. The result is that water will tend to flow away from the foundation and help minimize the chances of the rapid deterioration that would lead to weakening the entire structure.</li><li>○ Must be done carefully so as not to damage the foundations.</li><li>○ Foundations and/or basement walls must be given time to dry/cure.</li></ul>
2. Trenching	<ul style="list-style-type: none"><li>○ By pushing loose soil and stones back into the trench, it is possible to level out the area once again, especially if heavy equipment is used to pack the backfill tightly. Since the materials in the backfilling are usually natural, the area can also be seeded, allowing grass or plants to easily take root and cover the area where the trench was once situated.</li></ul>
3. Drilling	<ul style="list-style-type: none"><li>○ Once the pipes are set in place for a well, the soil and stones removed as part of the installation can then be placed back around the exterior of the pipe. The packed soil helps to stabilize the pipe and lessen the opportunity for the pipe to bend under pressure during usage.</li></ul>
4. Mining	<ul style="list-style-type: none"><li>○ When ore or metals are extracted from the mine, backfill materials are used to fill in and patch the areas where the digging took place. This process helps to keep the mineshafts stable and relatively safe for future excavation efforts by limiting the possible after-effects of seismic activity in the immediate area.</li></ul>

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### 2.3 WEeping TILE

#### General:

- A.K.A. **drain tile** or **perimeter tile**
- A porous pipe used for water drainage. It has small holes that are smaller than the aggregate material it is buried in. It collects water through the small holes and drains into a solid pipe, which is discharged or removed via sump pump.
- Can be used anywhere that soil needs to be drained, but particularly common near basement foundations as part of waterproofing the home. Can prevent leaks, humidity and mould.

<http://www.aquamasterplumbing.com/2015/01/26/everything-you-need-to-know-about-weeping-tile/>

Steps	Description
1. Dig a Trench	<ul style="list-style-type: none"><li>○ Dig a trench around the perimeter of house, exposing foundations.</li><li>○ Relocate plants and dirt.</li></ul>
2. Pour Aggregate	<ul style="list-style-type: none"><li>○ Pour a few inches of granite or gravel, which is too large to get through the pores (weep holes) in the pipe. This acts as a filter for water to get through without clogging the pipe.</li></ul>
3. Lay Pipe	<ul style="list-style-type: none"><li>○ The pipe will collect water from the soil and direct it either away from the house or to a sump pump to be pumped away.</li></ul>
4. Backfill	<ul style="list-style-type: none"><li>○ Cover the pipe with aggregate (such as granite or gravel) and then fill up with material that was removed (dirt, soil).</li><li>○ In some cases, concrete will need to be laid, depending on the property and landscaping.</li></ul>

### 2.4 GRADING & LEVELLING

#### General:

- Spell “levelling” with a double “l.” A single “l” is the American spelling (“leveling”).
- Surveyors do a similar “levelling” job, although this refers to elevation measurement and not actually flattening to the land.
- This refers to making the land flat and clear, so that it can be used for construction, landscaping or other projects.

<http://newenglandenterprises.com/proper-landscape-grading/>

<http://www.build.com.au/levelling-and-grading>

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Service/Product	Description	Benefits
<b>Grading</b>	<ul style="list-style-type: none"> <li>Using digging and excavation to give your property the desired slope.</li> </ul>	<ul style="list-style-type: none"> <li>Important for drainage</li> <li>A slight slope can drain water away from your property. A bad slope can drain water towards your house and cause damage.</li> <li>Without proper sloping, you may get standing water, which can breed insects and damage plants/lawns</li> </ul>
<b>Levelling</b>	<ul style="list-style-type: none"> <li>Use an auto-leveler (“dumpy level”) to measure two points on a horizontal plane and determine whether the ground is level.</li> </ul>	<ul style="list-style-type: none"> <li>Important to have a level base for your foundations.</li> </ul>
<b>Retaining Walls</b>	<ul style="list-style-type: none"> <li>Rock walls that divide an area of elevated ground from area of lower ground.</li> <li>Allows you to create plateau and levelling on your property.</li> <li>This is a specialized service – a lot of excavators that do retaining walls focus specifically on walls.</li> </ul>	<ul style="list-style-type: none"> <li>Adds visual interest to your property – levels rather than simply having everything at the same height.</li> <li>Maximize your use of your space. Rather than having slopes, you’ll have flat surfaces to work with.</li> </ul>

### 2.5 FOUNDATION EXCAVATION

#### General:

- During construction, builders may call in an excavation company to dig out the foundation.
- Building the foundations requires concrete pouring, so it’s likely that an excavation company will work with another contractor on this type of job.

<http://www.bobvila.com/articles/657-the-excavation-and-the-foundation/#.V8iVYTUyVCA>

Steps	Description
<b>1. Staking out</b>	<ul style="list-style-type: none"> <li>Staking out a property for excavation is measuring and marking where exactly the building we be constructed. Need to know where the property lines are.</li> <li>Using string and stakes, the ground will be marked where it’s going to be dug out.</li> </ul>

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<b>2. Digging</b>	<ul style="list-style-type: none"> <li>○ Excavation contractor will bring in heavy equipment like backhoes and excavators and dig out huge amounts of dirt, tree stumps, rocks and more.</li> <li>○ Must be deep enough to go below the frost line, so that the bottom of the foundations doesn't freeze.</li> </ul>
<b>3. Foundations</b>	<ul style="list-style-type: none"> <li>○ Laying the supports for the building.</li> <li>○ This involves concrete pouring, so likely won't be handled by the excavation contractor unless they offer that service. This is a job for general contractors, construction companies or concrete companies.</li> <li>○ Walls will be built on top of foundations.</li> </ul>
<b>4. Backfilling</b>	<ul style="list-style-type: none"> <li>○ The dug-out soil will be used to fill back in the hole.</li> <li>○ The soil should be graded to that water will flow away from the house rather than into its foundations. See the Backfilling (2.2) section of this document for more information.</li> </ul>

[https://en.wikipedia.org/wiki/Shallow\\_foundation](https://en.wikipedia.org/wiki/Shallow_foundation)

[https://en.wikipedia.org/wiki/Foundation\\_\(engineering\)](https://en.wikipedia.org/wiki/Foundation_(engineering))

[https://en.wikipedia.org/wiki/Deep\\_foundation](https://en.wikipedia.org/wiki/Deep_foundation)

Type of Foundations	Description
<b>Shallow Foundations</b>	<ul style="list-style-type: none"> <li>○ A type of foundation that transfers building loads to the earth close to the surface</li> <li>○ Usually a metre or so deep</li> <li>○ These should be below the frost line. When soil freezes, it can move your foundations and make them unstable.</li> <li>○ In residential building, this is typically a variety called spread footing foundation, which has a wider bottom portion than the load-bearing foundation walls it supports. This wider part "spreads" the weight of the structure over more area for greater stability.</li> </ul>
<b>Deep Foundations</b>	<ul style="list-style-type: none"> <li>○ Transfers buildings loads farther down below the surface</li> <li>○ A <b>pile</b> is a vertical structural element of a deep foundation which is driven deep into the ground with a pile driver.</li> <li>○ Reasons for deep foundations include large design loads (i.e. big buildings, poor soil at shallow depths or site constraints (like property lines).</li> </ul>

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### 2.6 BASEMENT LOWERING

<http://torontorealtyblog.com/archives/10303>

#### General:

- This refers to making the basement floor lower without changing the rest of the home.
- This has the advantage of making your basement a livable space rather than simply a storage area.
- Your basement can become a den, recreation area, additional bedrooms, or even a suite that homeowners can rent out in order to offset their mortgage. Increases value of the house.
- This involves foundation work, so companies that only do excavation won't do this.
- Bobcat/skid-steer loader can be useful when digging under an existing house, because overhead clearance may be low.

Method	Description	Pros and Cons
<b>Underpinning</b>	<ul style="list-style-type: none"><li>○ This consists of adding a new foundation and footing below the existing foundation</li><li>○ Done one foot at a time, otherwise the house would fall over. Dig out one foot, add footing, and so on.</li></ul>	<ul style="list-style-type: none"><li>○ PRO - Doesn't infringe on living space, so makes for the best basement and offers the best return on investment</li><li>○ CON – Time-consuming</li><li>○ CON – Costly</li></ul>
<b>Benching</b>	<ul style="list-style-type: none"><li>○ Create bench/ledge along the side of the basement walls.</li><li>○ Doesn't go fully underneath old foundation; rather tucks new foundation partly under it.</li></ul>	<ul style="list-style-type: none"><li>○ PRO – Quicker, easier and cheaper than underpinning.</li><li>○ CON – Takes away from floor space/living space.</li><li>○ PRO – Bench can be incorporated into the design of the room (bench can be a seat or a TV stand that's part of the entertainment system).</li></ul>

### 2.7 LANDSCAPING

<http://michellexcavating.ca/landscaping/>

#### General:

- Most excavation companies won't do traditional landscaping like planting, trimming, mowing, etc. They typically do larger tasks associated with landscaping like grading, leveling and reshaping the ground.
- Many of these services overlap with others services. (Hauling, grading, leveling, etc.)

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Services	Description
<b>1. Grading and Levelling</b>	<ul style="list-style-type: none"><li>○ Moving soil and preparing the land for plants and features to be added – creating slopes, flattening earth for planting, etc.</li><li>○ In order for further landscaping – plants, rock features etc. – to be added, first the land must be in the desired arrangement.</li></ul>
<b>2. Boulder Placement</b>	<ul style="list-style-type: none"><li>○ Placing and arranging heavy rocks, moving them to the desired areas of the property.</li><li>○ Removing them from the site when necessary.</li><li>○ Add character to your garden with rock formations.</li></ul>
<b>3. Removal and Delivery</b>	<ul style="list-style-type: none"><li>○ Some excavation companies with have connections with companies that provide soil. They can dig up existing soil and add more.</li><li>○ Sometimes, soil and rocks and other natural elements will need to be removed from the space.</li></ul>
<b>4. Ponds and Water Features</b>	<ul style="list-style-type: none"><li>○ Many ponds and water features will need to begin with a hole in the ground. They can dig out the area, remove soil from the site if necessary.</li></ul>
<b>5. Retaining Walls</b>	<ul style="list-style-type: none"><li>○ Add plateaus and levelling into your property. Retaining walls hold elevated earth in place.</li><li>○ See grading and levelling section for more information.</li></ul>

## 3. RELATED SERVICES

### General:

- Excavation companies are different from hauling/demolition companies, but they typically have large equipment capable of lifting/moving/demolishing very heavy loads.
- Since they have to transport excavation equipment to sites using large trucks, it's not uncommon for excavation companies to offer hauling and some types of trucking services.

### 3.1 SNOW REMOVAL

<https://trustedpros.ca/forum/home-improvements/demo-excavate-and-pour-footings-in-cold-weather>  
<http://www.aquaguardinjection.com/basement-waterproofing-blog/can-you-waterproof-a-basement-during-the-winter>

- Since they have heavy lifting equipment, excavators sometimes do snow removal during winter.

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- This is a useful service for excavators, since excavation/construction work can be seasonal. Depending on the climate, some excavators may not work in the winter, since outdoor work can be uncomfortable in cold regions. Cold weather can cause problems with concrete pouring, exposes the foundations to freezing temperatures, and it can be difficult to break ground if the soil is frozen. Winter excavation/construction work can require tarping and is more expensive. These are all good reasons to avoid excavation in the winter and do snow removal instead.
- Salting and sanding service often goes hand in hand with snow removal

### **Advantages of Hiring Professional Snow Removal**

- Provides safe access – allows homeowners to come and go freely, allows businesses to stay open and accommodate customers even when weather is bad
- Looks better, projects tidy image – makes your house look better, makes your business look professional and inviting
- Heavy-duty equipment means that client can avoid the backbreaking labour of shoveling – “let us do the heavy lifting for you”
- Depending on the company, can be available for one-time snow removal following a storm or regular maintenance appointments all winter long
- Parking lot clearing – this is a common service in cold climates. Allows businesses to stay open, provides year-round revenue stream for companies that make money off parking lots. This service is often performed in frequent maintenance throughout the winter (not just a one-time thing).
- Selling point will often be that they remove snow from the property, not simply push it in piles to the side of the site.

## **3.2 DEMOLITION**

### **General:**

- Excavators can be used for demolition, particularly of smaller structures like houses, sheds, garages, stores, smaller apartment buildings and commercial facilities.
- Backhoes are often used to demolish structures.
- There are attachments that can be attached to the digger arm to make it more suitable for demolition: grapple (which looks like a multi-fingered claw) or shears (which are cutting shears, like a single-fingered claw) to cut through and pull down building.

### **3.3 SITE PREPARATION/SITE CLEARING**

**General:**

- Site preparation is a general term referring to getting a property ready for construction.
- Largely means clearing away trees, large rocks and any materials currently taking up the land.
  - Debris hauling, log hauling, stump removal
- Consists of some of the same services covered at different points in this guide: grading, staking.
- This is followed by basement/foundation digging.