Excavation cost

Excavation costs **$2.50 to $15.00 per cubic yard** or **$1,100 to $5,600** total on average. Excavator hourly rates are **$100 to $300 per hour** to dig a basement, foundation, or pool. Land excavation estimates depend on the dirt type, depth, terrain, obstructions, and amount of earth moved.

Land excavation cost by project

Project	Average cost
Foundation pad for new home site	$1,500 – $10,000
Dig a basement for new construction	$1,500 – $10,000
Dig around existing house	$5,000 – $15,000
Dig an in-ground swimming pool	$1,000 – $5,000
Excavate a driveway, patio, or deck dirt pad	$1,000 – $2,500
Excavate a hillside or flatten slopes	$1,000 – $5,000
Grading for lawn installation	$1,000 – $5,000
Rock / ledge removal	$1,000 – $20,000+
Trenching for sewer, septic, or drainage system	$500 – $1,200

Trenching cost by project

Project type	Cost per linear foot installed	Total cost installed*
Drainage system	**$10 – $30**	**$1,000 – $4,000**
Electrical panel	**$6 – $14**	**$850 – $2,500**
Gas line	**$12 – $25**	**$350 – $1,000+**
Retaining wall	**$40 – $300**	**$4,000 – $10,000**
Sewer line	**$25 – $100**	**$1,000 – $4,300**
Water lines	**$30 – $50**	**$800 – $3,000**
Foundation	**$5 – $30 per square foot**	**$5,100 – $19,300**

Underground conduit installation cost

Line type	Material price per linear foot	Total cost per foot installed	Uses
½ inch non-metallic PVC conduit	**$0.90 – $1.50**	**$6.00 – $13.50**	Electrical wiring
Copper pipe (Type K)	**$6.00 – $11.00**	**$11.00 – $23.00**	Water line
4-inch PVC pipe	**$1.30 – $3.00**	**$6.30 – $15.00**	Sewer or drain line
1-inch polyethylene pipe	**$0.50 – $0.80**	**$5.50 – $12.80**	Irrigation or gas line
2-inch black steel pipe	**$7.00 – $15.00**	**$12.00 – $25.00**	Natural gas line

Electrical trenching cost

Electricians charge **$50 to $130 per hour** on average. Installing underground electrical wiring requires trenching but minimizes the chance of a power outage during a storm. Electrical trenching for underground service typically costs more in densely populated urban areas.

Other home electrical projects may require trenching:

- The cost to replace an electrical panel is **$850 to $2,500**, depending on the amperage, and may require trenching to run new conduit if upgrading to a higher amp panel.
- New electrical wiring for a hot tub installation costs **$800 to $1,600**, including a new circuit and outlet.

- A wired home security system costs **$800 to $1,600** installed.
- A home generator costs **$6,000 to $11,000** installed. Whole-home standby generators are typically powered by natural gas or propane and require trenching to run a new gas line and electrical conduit.

Cost to trench a water line

Replacing a water main costs **$30 to $50 per linear foot** or **$800 to $2,000** on average, depending on the type of pipe used and the distance from the home to a well pump or city water supply. Trenching a new water line costs **$1,700 to $3,000**, including connecting the system to the meter.

Other plumbing projects that require trenching include:

- Sprinkler system installation costs **$1,800 to $5,200** on average or **$500 to $1,000 per zone**.
- Swimming pool installation costs **$28,000 to $55,000** and often requires trenching for water and electrical lines.
- Digging or drilling a well costs **$25 to $61 per foot** or **$3,750 to $15,300** on average.
- Well pump replacement costs **$540 to $1,850**.

Cost to trench a sewer line

Sewer line installation costs **$25 to $100 per linear foot** or **$1,000 to $4,300** on average, including labor, materials, and trenching up to 40 feet from the home to a septic tank or public sewer system.

Other sewer and septic system projects often require trenching:

- Sewer line repair costs **$50 to $150 per linear foot**.
- Septic tank replacement costs **$3,280 to $5,040**.
- Septic drain field replacement costs **$3,000 to $15,000**.

Cost of digging a drainage system

An interior or exterior perimeter drain tile costs **$4,000 to $15,000** installed. A French drain costs **$1,000 to $4,000**, including trenching labor and materials. Drainage issues are one of the most common reasons for trenching around a home or yard.

Other methods of protecting the home from water damage include:

- Basement waterproofing costs **$1,900 to $6,300**. Excavators carefully trench around the foundation to expose the basement's exterior walls for waterproofing.
- A retaining wall costs **$40 to $300 per linear foot** installed, depending on the wall height and material.

Gas line trenching cost

Gas line installation costs **$12 to $25 per linear foot** on average, depending on the complexity, type of pipe, and distance from the main gas supply. Trenching costs increase if the new gas line crosses a driveway, sidewalk, or other obstacles.

Foundation trenching cost

Foundation excavation costs **$1,500 to $10,000** on average to create a foundation pad or dig a basement for a new home site. Excavating a large foundation or in areas with rocky soil costs **$20,000+**.

Geothermal heat pump trenching cost

A geothermal heat pump costs **$15,000 to $35,000** on average installed, depending on the system type and size. Installing a horizontal closed-loop geothermal system requires trenching to bury the loops 4 to 10 feet below the surface.

Trenching cost

Trenching cost factors

The following factors affect the cost of digging a trench:

- **Trench length and depth** – Most residential trenches are less than 5 feet deep. A trench that is 5 feet deep or greater requires shoring or a protective system to prevent the sides from collapsing onto workers.
- **Soil type and conditions** – Trenching costs less in areas with soft, loose soil and more in hard clay or rocky soil.
- **Equipment** – Hand-digging with a shovel takes longer and increases labor costs. Digging with a mechanical trencher or mini excavator takes far less time but increases equipment costs.

- **Labor** – Trenching labor costs **$35 to $65 per hour** on average, not including materials or other services. Landscapers charge **$50 to $100 per hour** for trenching to add drainage or irrigation systems.
- **Materials** – Trenching contractors typically include the cost of utility line flags, plywood for shoring trench walls, and hand-trenching shovels or hoes in their estimate.
- **Backfilling** – Fill dirt costs **$5 to $25 per cubic yard** or **$4 to $15 per ton** delivered. Confirm your estimate includes any required fill dirt or backfill materials, along with delivery fees.
- **Permit** – Permits for earthwork cost **$50 to $400**, depending on location.
- **Obstructions** – Trenching costs increase if the diggers encounter obstructions on or below the surface.
    - Tree removal costs **$300 to $2,000**, depending on the size.
    - Tree stump removal costs **$100 to $400**.
    - Removing large boulders or a rock ledge costs **$50 to $250 per cubic foot**.

Boring vs. trenching costs

Horizontal or directional boring costs **$10 to $30 per linear foot**. Directional boring is less invasive to the terrain above a project area, allowing contractors to drill an underground borehole beneath obstacles like concrete or pavement without damaging the surface.

Trenching FAQs

How long does it take to dig a trench?

Trenching 100 feet takes **2 to 3 hours** on average with a mechanical trencher or up to **10 to 12 hours** if digging with a shovel, depending on the depth, soil type, obstructions encountered, and if backfilling is included. Trenching in hard clay or rocky soil takes longer.

Do you need a permit to dig a trench?

Digging a trench requires a permit in some cities. Call 811, the national call-before-you-dig number, or visit the Common Ground Alliance website to check local regulations before digging.

Do electricians dig trenches?

Most electricians do not dig trenches themselves but subcontract laborers who handle the trenching for electrical conduit.

How deep are trenches?

Residential trenches are **12” to 24” deep** on average, depending on the purpose:

- Electrical wire must be buried at least 12” deep if housed in a rigid non-metallic conduit and 18” deep if housed in a weatherproof casing.
- Gas lines must be buried at least 24” deep in most locations. Some states require a 30” minimum depth instead.
- Water lines must be at least 12” below the local frost depth and no less than 2 feet underground. The frost depth varies from as little as 6” to over 72”, depending on the geographic location.

The U.S. Occupational Safety and Health Administration (OSHA) mandates that trenches 5 feet deep or greater require a protective

system of shoring or sloped walls to prevent the dirt from collapsing on workers.

Excavation cost

How much does excavation cost?

$2.50 – $15.00 Cost per cubic yard

$100 – $300 Excavator & operator hourly rates

$1,100 – $5,600 Average total excavation cost

Cost to level or regrade yard

How much does it cost to level a yard or regrade land?

$0.40 – $2.00 cost per square foot

$500 – $1,000 level small yard, patio, or pool area

$1,000 – $5,000 regrade average backyard or home lot

Dirt removal cost

How much does it cost to remove dirt?

$140 – $230 average cost per cubic yard

$140 – $180 average cost per ton

$1,400 – $2,300 1 dump truck load (10 cubic yards)

Brush pile removal cost

How much does it cost to remove a brush pile?

$150 – $200 cost per load

$50 – $80 cost per hour

$800 – $3,000 cost per acre

Forestry mulching cost

How much does forestry mulching cost?

$125 – $300 average cost per hour

$400 – $800 average cost per acre

$1,000 – $2,500 average cost per day