

If you plan to dig in Orange County, whether for a backyard pool in Irvine, a retaining wall in Mission Viejo, or a commercial project in Anaheim, you are working above a maze of underground utilities. Power, fiber optic, gas, water, sewer, reclaimed water, and private lines all compete for space under the pavement and landscaping.

Finding a buried electrical line or fiber optic cable is not a guessing game. It is a legal requirement, a safety issue, and a cost control measure all at once. The way you approach it will be different depending on whether you are a homeowner with a shovel or a contractor breaking ground with an excavator.

This guide walks through how utility locating actually works in Orange County, what 811 will and will not do for you, when you need a private utility locator, and what to expect in terms of accuracy, time, and cost.

What is utility locating, really?

Utility locating is the process of finding and marking underground pipes and cables before you dig. That sounds simple, but in practice it involves a mix of technology, experience, and local knowledge.

When people ask, “What is utility locating?” they often picture someone waving a magic wand over the ground. What a utility locator actually does is identify, trace, and mark the approximate horizontal position and depth of buried infrastructure so that excavation can happen safely and efficiently.

In Orange County, that usually means locating:

- Electrical power lines, both high voltage and low voltage
- Fiber optic and communication cables
- Gas pipelines
- Water service lines and mains
- Sewer and storm drains
- Reclaimed and irrigation water pipes
- Private facilities such as parking lot lighting, fire lines, or campus networks

The locator’s goal is to reduce the risk of damage and injury and to help you avoid change orders, delays, and emergency repair bills.

Public vs private utility locating

The most common confusion is about who is responsible for what. That is where the difference between public and private utility locating matters.

Public utility locating is usually what happens when you call 811. In California, the regional notification center alerts member utility owners who then send their locators to mark the lines they own and maintain.

Private utility locating is everything public locating does not cover. This includes lines that are on private property and owned by the property owner or a private entity, not by a public utility company. Examples:



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- Electrical conduit from a house to a detached garage
- Power and communication lines between buildings in a business park
- Private water and fire lines within a shopping center
- Landscape lighting, pool equipment power, and private low voltage systems

That leads to a practical rule: 811 is focused on public service lines up to the meter or demarcation point. Anything downstream that you own is usually a private utility, and 811 does not locate it.

When you see references to "What is the difference between public and private utility locating," this is what professionals are talking about. Public locating is a legal, regulated, and usually free service tied to 811. Private locating is a separate, fee-based service that fills in the gaps.

Is calling 811 the law in California?

Yes. In California, calling 811 before you dig is not just a good idea, it is required by law.

California Government Code section 4216 spells out the requirement. Anyone who plans to excavate must contact a regional notification center (811) at least two working days before digging, but not more than 14 calendar days in advance. This applies whether you are using hand tools or heavy equipment.

So when people ask, "Is calling 811 the law in California?" the answer is straightforward: if you are disturbing the soil, you must call. That covers homeowners, landscapers, plumbers, fence installers, and contractors of all kinds.

"Is it illegal to dig without calling 811 in California?" Yes, if you dig without a ticket and you damage a facility, you can be cited, fined, and held liable for repair costs and consequential damages. Even if you do not hit anything, you are still out of compliance.

Is utility locating free in California, and who pays?

For public utilities that participate in the 811 system, on standard jobs, there is no direct charge to the caller. So if you are wondering, "Is utility locating free in California?" the short answer is that 811 locating is free for the person calling, as long as it is ordinary excavation work and not an unusual request.

The utility owners pay for those locating services as part of the cost of maintaining their infrastructure. That is why 811 is available to homeowners at no cost.

Private utility locating is different. When you ask, "Who pays for utility locating?" in the context of private lines, it is the property owner or the contractor who hires the private locator. Private companies invoice for their time, travel, and technology.

What does 811 not locate?

811 is a notification system, not a single locating company. It does not own any equipment or send its own crews. It alerts the member utilities, and those utilities decide what to mark.

Common things 811 does not locate in Orange County include:

- Private electrical lines beyond the meter, such as power feeding detached structures
- Private fiber optic and data lines on campuses, hospitals, or business parks
- Landscape irrigation, pool plumbing, and low voltage lighting
- Private sewer laterals in some situations (these are often the owner's responsibility)
- Abandoned lines and undocumented facilities

"Does 811 locate private lines?" As a general rule, no. A few utilities may choose to help beyond their ownership boundary, but you cannot rely on that.

This is where a private utility locator comes in. If you have any doubt about what is private on your property, or the utility markings seem incomplete, you should assume you may need additional private utility locating.

How does utility locating work?

Most modern utility locating relies on electromagnetic (EM) locating and ground penetrating radar (GPR), sometimes supported by additional tools like sondes or CCTV cameras.

Electromagnetic locating works by sending a signal along a conductive line, either by direct connection or induction, and then detecting that signal at the surface. The locator follows the strongest signal to trace the route of a cable or pipe. This is very effective for metallic utilities such as copper power cables, steel gas lines, or tracer wires buried with plastic pipes.

Ground penetrating radar is used where EM cannot see everything. GPR sends high [Orange County Utility Locating](#) frequency radio waves into the ground and records reflections from changes in material. A skilled operator interprets those reflections to identify possible utilities, voids, or structures. When people ask, "What is ground penetrating radar used for?" in utility work, the answer is: to find non conductive utilities such as plastic or concrete pipes, to verify congested areas, and to supplement EM data.

How deep can utility locators detect? Under typical Orange County soil conditions, EM tools can often trace services several feet deep, sometimes more than 10 feet in ideal circumstances. GPR can also see several feet down, but depth and clarity depend heavily on soil type. Wet clays, for example, limit GPR penetration.

“How accurate is utility locating?” With good conditions and clear access, horizontal accuracy is often within a few inches to a foot. Depth estimates are less precise, typically within 10 to 20 percent of actual depth. Accuracy drops when utilities are bundled, untraceable, or poorly installed.

“Can utility locators find plastic pipes?” Yes, but usually only if the pipe has a tracer wire or associated conductive component. Pure plastic without any metal is mostly visible to GPR, not EM. Even then, success depends on soil and site conditions, which is why there are no honest guarantees.

What equipment do utility locators use?

Professional utility locators in Orange County typically work with a kit that may include:

- Electromagnetic locators with transmitters and multiple frequencies
- Ground penetrating radar units with different antenna frequencies
- Sondes (small transmitters) that can be pushed through conduits or pipes
- CCTV cameras for sewer and drain inspection, often with sondes attached
- Clamp-on transmitters that induce a signal without direct contact
- Marking paint and flags that follow standardized color codes

The choice of equipment depends on what needs to be found. For a buried electrical line or fiber optic cable, EM locating is usually the first tool. If there is no conductive path or the line is damaged, GPR becomes more important.

What do the utility marking colors mean?

The colored paint and flags you see on the ground are not arbitrary. They follow the APWA (American Public Works Association) color code, which is standard across California. When people ask, “What do utility marking colors mean?” or “What do orange utility flags mean?” they are referencing this code.

Here is a quick, practical guide:

- White: Proposed excavation. When you see white paint on the ground, that usually comes from the excavator marking the area where they intend to dig. If you are wondering, “What is the white paint on the ground for?” this is it.
- Red: Electric power lines, cables, conduit, and lighting. So “What does red paint mean on the ground?” It is a warning that electric lines are present.
- Orange: Communication, alarm, signal lines, cable TV, and fiber optic. Those orange utility flags often point to fiber optic cable or other communication lines.
- Blue: Potable water. Domestic water services and mains are typically marked in blue.
- Yellow: Gas, oil, steam, or other flammable materials. Hitting a yellow line can mean a gas leak and emergency response.

Other colors show up as well: green for sewer and drain lines, purple for reclaimed water, and pink often for survey markings.

Locators use these colors to keep different systems clear. When you see a mixture of red, orange, yellow, and blue across your yard or job site, it reflects how crowded the subsurface has become.

How do you find a buried electrical line in Orange County?

To locate a buried electrical line accurately, you need a conductive path and the right equipment.

Utility locators will usually connect an EM transmitter to an accessible point such as a meter, junction box, transformer, or exposed conduit. They then select a frequency appropriate for the run length and soil conditions and trace the line with a handheld receiver along the surface, marking its path as they go.

For homeowners asking “How do you find a buried electrical line?” there are a few realities:

- Store bought “stud finder style” devices are usually not reliable enough for safe excavation decisions.
- Voltage detectors can tell you if something is energized at a point, but they will not trace the route through the yard.
- Visual clues such as meter locations, risers, and panel positions can help, but they are no substitute for a proper locate.

In Orange County, many residential laterals run from the front property line to the meter location on the side of the house, buried at depths from roughly 18 inches to 36 inches. Remodels and older homes often deviate from this pattern, sometimes dramatically.

A professional locator will typically mark the route in red paint and flags, sometimes adding depth readings. If the line is de energized, damaged, or heavily shielded, they may pair EM with **Orange County Utility Locating** GPR or other methods to reconstruct its likely path.

How do you locate a fiber optic cable?

Fiber optic cables are usually part of the “orange” family in utility markings. Fiber itself is glass or plastic and does not conduct electricity, so you cannot simply clip a transmitter onto the fibers. However, fiber cables are commonly installed with metallic sheathing or a tracer wire that can be energized with EM equipment.

To answer “How do you locate a fiber optic cable?” professionals usually:

1. Identify access points such as handholes, splice cases, or cabinets.
2. Connect an EM transmitter to the cable sheath or tracer wire if available.
3. Trace the signal at the surface with an EM receiver.
4. Use GPR to confirm locations or fill gaps where the EM signal is poor.

For critical fiber routes, the tolerance for error is very low. Damaging a major fiber line can knock out service for hundreds or thousands of customers, including 911 systems. This is why many facility owners require both 811 locating and a private locator for complex work near fiber corridors.

Locating water, gas, sewer, and septic systems

Buried electrical and fiber optic lines rarely exist alone. On a typical Orange County property, you will also cross:

- Potable water lines feeding the home or building
- Gas service lines from the street main to the meter
- Sewer laterals and possibly storm drains
- Irrigation, reclaimed, or grey water systems
- Septic tanks and leach fields in rural or older areas

“How do you locate a buried water line?” Often by EM tracing on the metallic pipe or tracer wire, or by acoustic methods in some cases. Plastic water lines with no tracer wire are more difficult and may depend on GPR, along

with educated guesses based on plumbing layout.

“How do you locate a buried gas line?” Gas utilities usually have good records and tracer wire on plastic lines. Public gas lines are typically marked by the gas company after an 811 ticket. Private gas lines, such as those feeding pool heaters or outdoor kitchens, may need a private locator.

“How do you locate a sewer line?” Sewer pipes are often PVC or clay and non conductive. Locators send a CCTV camera or a sonde down a cleanout or drain. The sonde transmits a signal that can be followed at the surface. GPR can sometimes see larger sewer mains as well.

“Can you locate a septic tank?” Yes, often with GPR, probing rods, or following the line from the home to the tank area. Older, undocumented septic systems can be tricky, and success depends heavily on site history and surface clues.

How long does utility locating take?

“How long does utility locating take?” depends on three main factors: size of the area, complexity of utilities, and the level of service requested.

For a typical single family home in Orange County, public utility locating via 811 is usually completed within two working days after the ticket is processed. Crews from different utilities may come at different times within that window and leave colored marks on the ground.

A private utility locator performing a standard residential locate might spend 1 to 3 hours on site, depending on the age of the property, presence of outbuildings, and number of systems to check. Large commercial or industrial facilities can take a full day or more.

Subsurface utility engineering (SUE) work, which is a more formal process used on engineering projects, often includes records research, surveying, multiple locating passes, and quality level designations (such as ASCE 38). That can stretch into several days or weeks, but the goal is higher accuracy and better documentation for design teams.

How much does utility locating cost in Orange County?

Public utility locating through 811 is free to the caller. So if someone asks, “How much does utility locating cost in Orange County?” the first answer is that there is no fee for standard 811 locates for public utilities.

Private utility locating is a different budget item. Prices vary by company, but realistic ranges in Orange County are often:

- For a basic residential private locate, somewhere in the range of \$250 to \$600, depending on site size, access, and travel.
- For small commercial sites, often in the \$500 to \$1,200 range.
- For complex facilities or SUE quality level B work, costs can climb higher, especially if multiple days and survey deliverables are involved.

So when you search, “How much does private utility locating cost?” understand that you are paying for specialized equipment, liability coverage, and the experience to interpret noisy signals and conflicting records. A good locator can save you many times their fee by preventing one serious hit.

What happens if you cut a utility line?

Striking a utility is one of the fastest ways to turn a simple job into a legal and financial problem.

“What happens if you cut a utility line?” depends on what you hit:

- Electrical: Risk of serious injury or death, potential fire, and immediate power outage. Utility crews will treat this as an emergency.
- Fiber optic: Service outages for businesses, homes, and possibly emergency services. Repairs often require specialized splicers.
- Gas: Leak risk, possible evacuation, and fire or explosion hazards. 911 and the gas company must be notified immediately.
- Water: Flooding, erosion, and property damage. Public water line breaks can affect neighbors and street stability.

“Who is liable if I hit a utility line?” If you failed to call 811 or did not follow the markings and safe excavation practices, you will likely be held liable for repair costs and any resulting damages. If you followed the law, have a valid ticket, and the line was mismarked or not located, liability may shift to the utility or locator, but this often ends up in dispute.

“How much does it cost to repair a damaged utility line?” Costs can range widely:

- A small residential electrical lateral repair might run from around \$1,000 to \$5,000 or more, depending on trenching, permitting, and restoration.
- Fiber optic repairs can cost several thousand dollars, particularly if traffic control, night work, and splicing are required.
- Gas line repairs can climb quickly due to emergency response, road work, and safety measures.
- Public main breaks sometimes reach into tens of thousands of dollars after pavement restoration and associated work.

“What happens if I dig without calling 811?” Beyond fines and liability, you risk injury, project shutdowns, and strained relationships with clients or neighbors. For professionals, repeated violations can affect licensing and reputation.

Do I need a permit to dig in Orange County?

Whether you need a permit to dig in Orange County depends on where you are and what you are doing.

For work in the public right of way, such as sidewalks, curbs, and streets, you almost always need an encroachment or excavation permit from the city or county agency that controls that road. For work on private property, building or grading permits may apply if you move significant soil, change drainage, or build structures.

“Who do I call before digging in Orange County?” starts with 811 for utility locating. For permits, you then contact:

- Your local city building department if you are within city limits.
- The Orange County Public Works or OC Development Services if in unincorporated areas.
- Homeowners association, if applicable, for architectural approvals.

“Do I need a permit to dig in Orange County?” for a simple backyard planting hole, usually not. For retaining walls, pools, large trees, or grading, often yes. When in doubt, a quick call to the building department is far cheaper than fixing unpermitted work later.

Can I locate my own underground utilities?

Many homeowners ask, “Can I locate my own underground utilities?” or “How do I find underground utilities on my property?” You can certainly gather clues:

- Look for meters, cleanouts, hose bibs, gas risers, and irrigation valves. These often indicate general utility routes.
- Check any available as built drawings or plot plans from the city, builder, or previous owners.
- Use logic: utilities usually take the shortest feasible path from the street to the house or from the house to obvious service points.

But you cannot legally replace 811 with your own efforts. Calling 811 remains mandatory before excavation. For private lines, DIY methods are risky unless the stakes are very low, such as shallow planting in a clearly utility free zone.

“Should homeowners hire a utility locator?” If you are doing anything deeper than typical gardening, installing fences, building walls, or working near visible utility infrastructure, hiring a private locator in addition to 811 is often a wise investment.

What is subsurface utility engineering, and when does it matter?

Subsurface utility engineering (SUE) is a structured approach to identifying and mapping underground utilities for design and construction. Instead of quick field markings, SUE often includes:

- Records research
- Comprehensive locating with EM, GPR, and other methods
- Assigning quality levels (from D, records only, to A, exposed by vacuum excavation)
- Delivering CAD or BIM files to designers

For major Orange County projects, SUE reduces redesigns, change orders, and utility conflicts. When people ask, “Why is utility locating important before excavation?” SUE is the professional answer: it brings utility information into the design phase, not just the day before you dig.

A simple sequence before you dig

To pull all of this together, homeowners and small contractors in Orange County can follow a straightforward sequence before putting any shovel in the ground:

- Mark your planned excavation area in white paint, so utilities and private locators know exactly where you plan to work.
- Call 811 at least two working days before digging, but not more than 14 days in advance. Document your ticket number.
- Walk the site after public locates are done. Compare markings to your plans. If areas seem unmarked or you know about private systems, contact a private utility locator.
- Adjust your excavation plan as needed, and dig carefully, especially within the tolerance zones around marked utilities.

This process may feel slow when you just want to start the job, but it is far faster than dealing with a hit.

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Choosing a utility locating company in Orange County

When people search for "What is the best utility locating company in Orange County?" they usually want a firm answer. In practice, "best" depends on your needs.

For a homeowner with a small project, you want a company that is responsive, clear about pricing, insured, and experienced with residential work. For engineers and contractors, you may need a firm that can provide SUE services, CAD deliverables, and work seamlessly with your project team.

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Regardless of project size, ask about:

- Their experience with the specific utilities you are worried about, such as buried electrical lines or fiber optic cables.
- The equipment they use, including EM and GPR.
- Their approach to difficult or ambiguous situations, such as undocumented lines.
- How they document findings, from field sketches to digital maps.

A thoughtful locator will not promise perfection. Instead, they will explain what is feasible on your site, how accurate they expect to be, and where uncertainties remain. Those conversations are as valuable as the paint on the ground.

Finding buried electrical lines and fiber optic cables in Orange County is not a one step trick. It is a combination of legal compliance through 811, careful use of technology, respect for the limits of each method, and an honest assessment of risk. If you treat utility locating as an integral part of planning, not as an afterthought, you will protect people, schedules, and budgets every time you dig.