

A User's Guide to Safe Excavation Practices in New York State

2022 Excavator Manual



- Wait the Required Time
- Confirm Utility Response
- Respect the Marks
- Dig with Care



NYSEG



RG&E

Part of the AVANGRID Family

Preface

The purpose of this document is to provide a basic understanding of your responsibilities under *16 NYCRR Part 753* (also cited as *Industrial Code 53* or *Code Rule 53*), concerning safe excavation practices and the protection of underground facilities in New York State.

This document is not intended as a legal reference, and does not contain the complete text of *16 NYCRR Part 753*.

A complete copy of *16 NYCRR Part 753* is available from:

■ **New York State Public Service Commission**

3 Empire State Plaza
Albany, NY 12223-1350
Administration: **518.474.5453**

■ **UDig NY**

5063 Brittonfield Parkway
East Syracuse, NY 13057
Administration: **315.437.7394**
UDigNY.org

■ **New York 811**

60 Knickerbocker Avenue
Bohemia, NY 11716
Administration: **800.524.7603**
newyork-811.com



For information on pipeline safety, contact:

■ **National Pipeline Mapping System**

For more information about the pipelines and pipeline operators that might be located in your community, you can contact the National Pipeline Mapping System at: **npms.rspa.dot.gov**.



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Your One-Call Center

Why Do I Need to Call Before I Dig?

It's the law in the state of New York, and it is also a necessary part of planning your work. Reviewing your work and your work area prior to the actual excavation or demolition can help save you and your company from unexpected downtime, loss of revenue and injury.

A safe excavation or demolition can be achieved by following the suggestions and processes outlined in this manual.

Who We Are

UDig NY (serving all of New York State excluding NYC and Long Island) and **New York 811** (serving only NYC and Long Island) are the One-Call Centers serving as a link between you the excavator and the utility owner operators. We take your calls and transfer the information to the utility operators.

UDig NY and New York 811 do not mark lines!

Call Center Hours

Both centers take location request calls, 24 hours a day, 7 days a week.

Call Center Operation

The following will take place after you have provided all the appropriate information to the One-Call operator (customer service representative). Listen carefully and verify the read-back for accuracy.

- The customer service representative will read all the information back to you.
- Listen carefully and verify for accuracy.
- You will be given a list of member utility owners the One-Call Center will notify. It can be used to check real time status of the utility operators' responses at **UDigNY.org** through our APR system.
- You will also be given a location request number as proof of your call and a reference. Write down that number and retain it for your future records. This can be used to check real time status of your responses at **UDigNY.org** through our APR system.
- Remember, not all utilities and municipalities are members of the One-Call system. If you are aware of any other underground facilities, you should contact that operator directly.

Call Before You Dig!

UDig NY

(serving all of New York excluding NYC and Long Island) Call **811** or **800.962.7962**

UDigNY.org



UDIG·NY

New York 811

(serving only NYC and Long Island)

Call **811** or **800.272.4480**

newyork-811.com

1. You MUST call for a location request at least two working days but not more than 10 working days before any excavation or demolition starts (excluding holidays and weekends).

Legal Mark-Outs Example Calendar

MON	TUES	WED	THU	FRI	SAT	SUN	MON	TUES	WED	THUR
CALL	DAY 1	DAY 2	DIG							
	CALL	DAY 1	DAY 2	DIG						
		CALL	DAY 1	DAY 2	DIG					
			CALL	DAY 1			DAY 2	DIG		
				CALL			DAY 1	DAY 2	DIG	
					CALL		PROCESS	DAY 1	DAY 2	DIG
						CALL	PROCESS	DAY 1	DAY 2	DIG
				CALL			HOLIDAY	DAY 1	DAY 2	DIG

2. You must call regardless of where the planned excavation, and/or demolition is located. Even if it is on private property, out in the middle of a field, or on a street that has no name, you must call.

Continued on next page...

3. You must call even if you are only excavating a few inches or just surface grading. If you move material, you must call.
4. You must call even if the property owner tells you the site has no buried facilities, or he or she knows where buried facilities are located.
5. Make sure you have a proper location request, don't rely on old marks, or another excavator's marks or stake out request. No piggybacking.
6. Mark out the area you plan to excavate with white paint, flags, or stakes (see page 6).
7. When investigators from the Public Service Commission (PSC) inspect an excavation or demolition site or investigate damage, they will check to see if you have a proper location request.
8. Review the Location Request Information Sheet so you will know what you need when you call (see page 5).
9. *Part 753* defines an emergency as any abnormal condition which presents immediate danger to life or property including discontinuance of a vital utility service necessary for the maintenance of public health, safety and welfare.
10. **For emergency excavations or demolitions notify your One-Call Center with the location of the emergency excavation or demolition as soon as possible! To constitute an emergency, you must be on-site or on the way to the site to do the work.**

Excavation

An excavation is defined as any operation for the purpose of movement or removal of earth, rock, pavement or other materials in or on the ground by use of mechanized equipment or by blasting.

Excavations or demolitions include, but are not limited to:

- Demolition of Structures
- Cable or Pipe Plowing or Driving
- Setting Poles
- Driving Survey Pins
- Installing Sign Poles
- Boring Holes for Percolation Tests
- Ditching
- Augering
- Moving Earth
- Backfilling
- Pulling
- Fence Post
- Tree Root Removal/Stump Grinding
- Drilling
- Grading
- Trenching
- Digging
- Scraping
- Razing
- Dredging
- Tunneling
- Wrecking
- Saw Cutting
- Jackhammering
- Milling
- Pile Driving
- Plowing In



Location Request Information Sheet

Company ID#: _____

Today's Date: _____

Company Name: _____

Company Mailing Address: _____

City: _____ State: _____ ZIP: _____

Phone: _____

Fax: _____

Email: _____

Field Contact Name: _____

Phone: _____

Name or Company for whom you are doing the work: _____

NYS Law requires at least 2 full working days advance notice, not including the day you call.

Start Date: _____

Start Time: _____

Duration of Job: _____

Days/Hours/Weeks/Years/Unknown

Excavation Site State: New York

County: _____

City/Town/Village

Street Address: _____

The TWO nearest cross streets the address is located between:

Near Street 1: _____

Near Street 2: _____

Where on the property are you excavating: _____

Depth of Excavation: _____

Inches/Feet

Length: _____

Feet/Miles/Meters

Width: _____

Inches/Feet

Type of Work: _____

Means of Excavation: _____

Will there be Blasting? Yes No

Will there be Boring or Directional Drilling? Yes No

Is the Dig Site within 25 feet from the edge of the road or in the road?

Yes No

Are you digging on both sides of the road? Yes No

Is the Excavation marked in WHITE? Yes No

Guidelines for Marking Proposed Excavations

The following is only a guideline. Refer to the current *Common Ground Alliance (CGA) Best Practices* for complete details (commongroundalliance.com). These illustrations are examples of how excavators should mark the area of proposed excavation. Use white marking products (paint, flags, stakes, whiskers or combination) to identify the excavation site.

Single Point Excavations Markings



1" Wide Line
& Company
Identifier

Full Line



1" Dia. Dots
& Company
Identifier

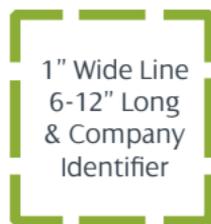
Dots may have less
than 4' spacing

Radius or Arc



1" Wide Line
6-12" Long
& Company
Identifier

Four Corner



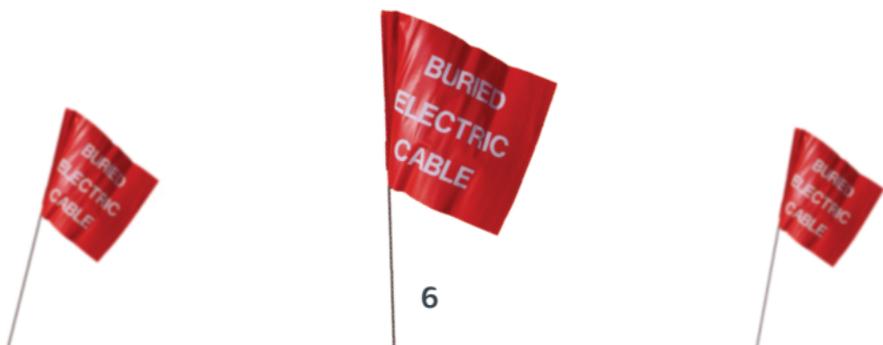
1" Wide Line
6-12" Long
& Company
Identifier

Dash Line

Mark with white paint the proposed area of excavation by using: a continuous line, dots marking a radius or arc, dashes marking the four corners of a project, or dashes outlining the excavation project. Make the dash about 6" to 12" in length and 1" in width. Space them between 4' to 50' apart. Make the marks close together enough to be seen by the operator's locators. Dots of about 1" in diameter are typically used to define arcs or radii and can be placed at closer intervals instead of dashes.

Using a Single Stake to Mark the Center Point of Excavation Site

When an excavation site is contained within a 50' radius, or less, you can mark it with a single stake positioned at the center of the proposed excavation. If you choose this way of marking, you must tell the One-Call Center you have marked the excavation site with a single stake at the center and include the radius of the site. The stake has to be white and have this information on it: excavator's name, abbreviations, or initials, and the radius of the excavation site in black letters on the stake or a note attached to the stake.



Wait the Required Time

1. Before you begin any non-emergency excavation or demolition you must call your One-Call Center and make a location request, at least two but not more than 10 working days, before your excavation or demolition begins (not including the date of your call).
2. Do not start excavating or demolition before your stated commencement date and time!
3. Weekends and holidays are not working days and are not counted in the two to 10 days between the date of your location request and your commencement date (see holidays below).
4. If your excavation or demolition has not started within 10 working days of the stated commencement date, your location request will no longer be valid, and a new location request is necessary.
5. If the excavation or demolition work is completely cancelled, that must be reported to the One-Call Center.
6. Once excavation or demolition has begun, the location request is good for the life of the excavation or demolition. The excavator is responsible for maintaining the marks from the stated commencement date (see page 11).

Holidays:

New Year's Day	January 1
Martin Luther King Day	3 rd Monday in January
Presidents Day	3 rd Monday in February
Memorial Day	Last Monday in May
Independence Day	July 4
Labor Day	1 st Monday in September
Columbus Day	2 nd Monday in October
Veterans Day	November 11
Thanksgiving Day	4 th Thursday in November
Christmas Day	December 25

Confirm the Utility Response

1. Remember, facility operators will only mark out facilities for which they are responsible.
2. Facility operators owe you a positive response through APR, and you are responsible for making sure each operator on your ticket has responded.
3. By law, a facility operator can delay marking out your excavation site a maximum of two working days. However, any delay of more than two working days will require your consent.
4. If you do not hear from a facility operator identified on your location request before your stated commencement date, call the facility operator's contact number. Do not begin excavation! If you do not have the contact number, please call your One-Call Center, OR utilize the APR system to verify responses and contact information at UDigNY.org
5. It is important you provide accurate field contact numbers when you call the One-Call Center for a Location Request; this is the number facility operators will call if they need to contact you regarding your location request.

Automated Positive Response (APR) System



Automated Positive Response (APR) system: a system established by the one-call notification system to furnish single point of contact between member operators and excavators for the purpose of communicating the status of an excavation or demolition location request as provided by the member operators.

753-3.3 COMMENCEMENT OF EXCAVATION OR DEMOLITION

- A. The excavator may proceed with excavation or demolition on the stated date of commencement if, prior thereto, he or she has received notification from each and every operator notified by the One-Call notification system that:
 1. Such operator has no underground facility located in or within 5 feet of the work area; or

Continued on next page...

2. That any underground facility located in or within 15 feet of the work area has been staked, marked or otherwise designated in accordance with the provisions of *Subpart 753-4 of this Part*.
- B. The excavator shall not commence the excavation or demolition on the stated commencement date if he or she has been notified by an operator that the staking, marking or other designations of an underground facility located in or within 15 feet of the proposed work area will not be completed on the stated commencement date. In such case, the operator is required promptly to report such fact to the excavator and to inform the excavator of a prompt and practicable completion date, which in no case shall be more than two working days after the excavator's stated commencement date, unless a longer period is agreed to by both parties.
 - C. The excavator may proceed with excavation or demolition prior to the stated date of commencement once he or she has received notification from each and every operator notified by the One-Call notification system that each operator has no underground facilities located in or within 15 feet of the work area.
 - D. Where available through the One-Call notification system, the excavator shall utilize the APR system in order to obtain the response(s) of the operators that were notified by the One-Call notification system.

753-4.5 OPERATOR'S RESPONSE TO NOTICE

- A. Prior to the stated commencement date of the excavation or demolition work as stated in the recorded notice, the operator shall make a reasonable attempt to inform the excavator, by means of an APR system, where available, or by means of direct communications with the excavator, where APR is not available, that either:
 1. The operator has no underground facility in or within 15 feet of the work area; or
 2. Every underground facility belonging to him or her which is located in or within 15 feet of the work area has been staked, marked or otherwise designated in accordance with the provisions of this Subpart.
- B. Where an operator cannot complete the staking, marking or other designation of an underground facility prior to the stated commencement date and time of the excavation or demolition,

Continued on next page...

the operator shall promptly report such fact to the excavator and shall inform the excavator of a prompt and practicable completion date which in no case shall be more than two working days after the excavator's stated commencement date, unless a longer period is agreed to by both parties.

- C. Whenever an excavator requests a review of any staking, marking or other designation, the operator shall comply with such request as soon as possible.

753-5.3 SYSTEM DUTIES

Each one-call notification system shall perform the following duties:

- A. Provide highest priority to notices concerning the discovery of underground facilities that have unknown operators or are in danger of failing;
- B. Conduct a continuing program to:
 - 1. Inform excavators of the one-call notification system's existence and purpose and their responsibility to notify the One-Call notification system of planned excavation and demolition and to protect underground facilities;
 - 2. Inform operators of the responsibility to participate in the One-Call notification system, to respond to a notice relating to a planned excavation and demolition and to designate and mark facilities according to the provisions of this Part.
- C. Provide a means by which contact information provided by the member operators can be obtained for the purpose of learning the location of underground facilities for design purposes.
- D. Provide an APR system for mandatory use by excavators and member operators, where determined by the One-Call notification system to be technologically and economically practical.

Respect the Marks

1. You are responsible for maintaining the marks set down by facility operators at your site.
2. Before you begin your excavation or demolition, walk through the site to familiarize yourself with the markings and the locations of buried utilities. It is a good practice to photograph, videotape or make a sketch of the marks.
3. Pay special attention to any changes in the direction of the underground facilities.
4. If your excavation or demolition will cause the removal or disturbance of markings, establish offset marks in order to maintain a reference point for those underground facilities.
5. Make sure everyone involved in your excavation or demolition is aware of any established offsets, any compromised marks, or any other information regarding facility locations.
6. Don't put spoil piles over markings. Avoid driving machinery over stakes and flags. Paved areas should be swept periodically so painted marks remain visible.
7. If marks have faded or been compromised to the point where proper and safe excavation or demolition is no longer possible, call your One-Call Center and make a request for a re-mark.
8. If your project is interrupted for more than 10 working days, call your One-Call Center and make a request for a re-mark.
9. If you refresh the markings at your site, make sure you use the uniform color code and identification letters to avoid any confusion. Make a note of the date and actions taken to refresh the marks.
10. Once the project is complete, it is recommended you remove any marks as best you can. This will reduce the likelihood future excavators will mistake them for marks provided in response to their own excavation notice, or assume they do not need to provide notice of intent to excavate.



Guide to Marks

The following is only a guideline. Refer to the current *Common Ground Alliance (CGA) Best Practices* for complete details at commongroundalliance.com.

1. Utility lines must be indicated by markings using current APWA uniform color codes. Markings should be 12" to 18" in length and 1" wide.
2. The owner of a facility should be indicated by initials or by name in letters 6" high at the beginning and end of the locate. On long locates, the facility owner should be indicated every 100'.
3. For operators with multiple facilities within an excavation area, for example bundled or stacked facilities, the total number of lines within the ground should be indicated when known.
4. If a facility is known to be present but the total number of lines for a facility cannot be determined a corridor marker may be used indicating the approximate width of the facility if known.
5. When known, the size of the line being located should be indicated. Line size should indicate the outside diameter of the pipe or structure.
6. Conduit or duct structures, whether single or multiple conduits or ducts, should be indicated by the conduit symbol indicating the approximate depth of the structure.
7. When known, the pressure of a gas facility should be indicated.
8. When known, termination points, dead ends and stub outs should be indicated.
9. Offset markings should be used when there is a strong likelihood that marks may be destroyed (for example, if placed directly over the facility).

Continued on next page...



Guide to Marks

The following is only a guideline. Refer to the current *Common Ground Alliance (CGA) Best Practices* for complete details.

commongroundalliance.com

Marking Gas Lines ~ High Pressure



Marking Transmission Point, Dead End, Stub Outs



Marking Offsets

Indicate ~ Facility owner,
direction to facility
& distance to facility



No Conflict

(No facilities within the requested area)

NO/MCI NO/EPG

Conduit or Duct Markings



Marking Buried Splices, Valves, Manholes



Corridor Marking

Identification when number of
facilities is not readily known



Dig with Care

1. Before you use powered equipment within the tolerance zone (see page 16), you must:
 - Verify the location, type, size, direction-of-run and depth of the facility.
 - For natural gas and liquid petroleum lines, verification must be by means of hand-dug test holes.
 - The location of other utilities must also be verified by means of hand-dug test holes unless otherwise agreed upon with the facility operator.
2. Do not assume that buried facilities will be at a certain depth.
 - Facilities may have been originally installed at a prescribed depth, but later erosion or grade changes cause them to now have shallow or deep cover.
3. Verification by a hand-dug test hole requires the facility to be exposed to view.
 - If after a diligent search the facility cannot be verified in this manner, notify the facility operator, or your One-Call Center (do not assume clearance).
4. Vacuum excavation is an accepted means of verifying the location of marked facilities.
5. Powered equipment may be used for removing pavement, but only to the depth of the pavement.
 - Care and good judgment should be used when removing pavement.
 - Avoid starting the pavement break directly over the marked facility.
 - Wherever possible, start a few feet away from the marks and attempt to “peel” off the pavement or break it into small chunks for removal.

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6. Verify the location of utilities before you excavate up to the edge of the tolerance zone.
 - It is a good practice to assign workers to do the utility verifications ahead of the excavating crew. You'll be providing a greater margin of safety and any problems can be resolved in time to minimize interference with the excavation.
7. If the excavation is going to cross a tolerance zone, dig a test hole to expose the facility at the point of crossing.
8. If your excavation is going to parallel a utility, you should dig test holes at any marked change of direction, elevation and at branch connection.
9. For relatively straight excavations parallel to a utility, a test-hole should be dug approximately every 20 to 25 feet or as requested by the facility operator.
10. If you find an unmarked or unknown facility, and you can tell who the facility owner is, notify them. Otherwise, notify the One-Call Center.



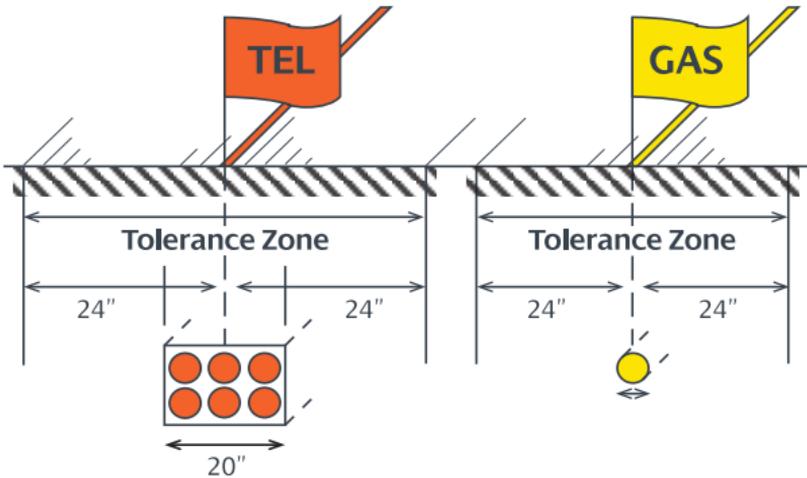
Tolerance Zone

The tolerance zone is defined as:

- 2 feet on either side of the designated center line of the facility if the diameter is not provided.
- Or 2 feet from each outside edge if the diameter is provided.

For example:

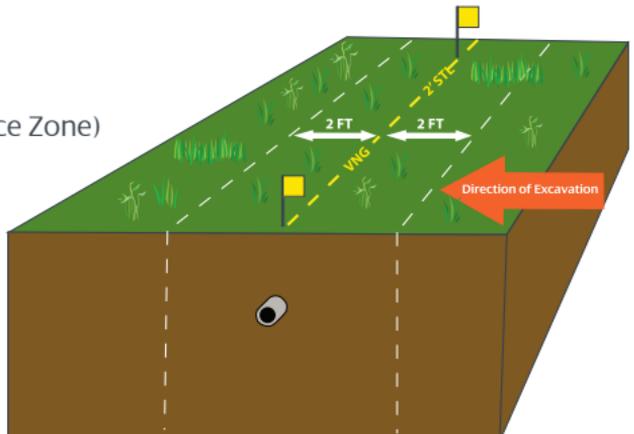
Measuring the Tolerance Zone



The facility at left is marked as being 20" wide. So, 24" on each side, plus the width of the facility, gives us a tolerance zone of 68".

The facility at right is marked with its location, but shows no width. So, 24" on each side gives us a tolerance zone of 48".

(Example of the Tolerance Zone)



Excavation After Verification; Damages and Breaks

1. When excavating close to an underground facility, it is a good practice to have a spotter assist and guide the machine operator.
2. After you have verified the location of a facility, by hand digging, you must maintain a minimum clearance of 4 inches between the facility and any mechanized equipment.
3. If the excavation work requires significant spans of the facility to be exposed, support them to prevent sagging or collapse.
4. Take care not to damage the protective coating of a facility. If you do, leave the damaged facility exposed and immediately call the facility operator.

If a Facility is Contacted or Damaged

1. If you damage a facility, you must immediately call the operator whose facilities have been damaged, even if you only scrape the protective coating. Left untreated this type of damage can lead to a catastrophic failure.
2. You should keep the emergency number of your local facility operators readily available (see page 22).
3. If you are in doubt about whose facility it is, call your One-Call Center. They will transmit a notice to all facility owners in the area.

If You Break a Natural Gas, Petroleum or Propane Line, Follow These Steps:

1. Stop work and evacuate the site.
2. Call **911** (NYS Law).
3. Call the appropriate facility operator.
4. Don't do anything that could cause a spark.
5. Alert everyone on the premises.
6. Keep the public and traffic away.
7. Tape, rope or place cones around the area.
8. Stay upwind of blowing gas.
9. Do not try to fix a damaged pipe.
10. Do not try to extinguish a gas burning fire, unless there is a threat to life.



Leak Recognition and Response

A natural gas leak is usually recognized by smell, sight, or sound.

- **Smell:** Natural gas is colorless and odorless. A distinctive, pungent odor is usually added so you'll recognize it quickly.
- **Sight:** You may see a white cloud, mist, fog, bubbles in standing water, or vegetation that appears to be dead or dying for no apparent reason.
- **Sound:** You may hear an unusual noise like roaring, hissing, or whistling.

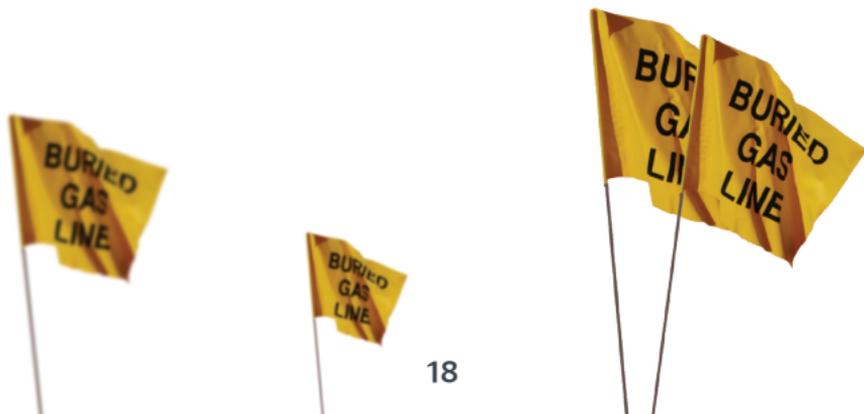
What to Do if You Suspect a Leak

- **Move** to a safe environment.
- **Call** the pipeline operator (see page 32) – they are available 24 hours a day, 7 days a week. Provide the exact location, including cross streets. Let them know if sewer construction or digging activities are going on in the area.
- **Do not** smoke or operate electrical switches or appliances.
- **Do not** assume someone else will report the condition.

Reporting Emergencies

Part 753 Emergency Requirements: In the event of an emergency involving danger to life, health or property as a result of damage to an underground facility containing gas or liquid petroleum products or as a result of an electrical short or escape of gas or hazardous fluids, the excavator must:

- Proceed to evacuate his or her employees and all other endangered persons from the immediate vicinity to the best of his or her ability, and;
- Immediately notify **911** and the operator of the affected facility of the exact location, nature of the emergency and of the underground facility which is affected.



Pipeline Purpose and Reliability

Natural gas, propane and petroleum pipelines quietly, reliably and efficiently deliver a product for residential, commercial and industrial use.

The pipeline industries work very closely with government agencies and stay abreast of new security methods and technologies to ensure the highest levels of security. Individual companies evaluate their security procedures on a regular basis and continually enhance security programs as needed.

Hazard Awareness and Prevention Measures

Like all forms of energy, natural gas, propane and petroleum must be handled properly. Despite an excellent safety record, a leak caused by damage to a pipeline may pose a hazard and has the potential to ignite. The pipeline industry works diligently to ensure pipeline safety through a variety of measures including:

- Coordination with One-Call Centers
- Inspection programs
- Design and construction practices
- Workforce qualifications
- Industry safety practices and government oversight
- Pipeline markers and facility mapping
- Public education programs

Pipeline Locations

Since pipelines are underground, line markers are sometimes used to indicate their approximate location along their route. The markers display the material transported in the line, the name of the pipeline operator, and the telephone number where the operator can be reached in the event of an emergency. Markers only indicate the general location of a pipeline and cannot be relied upon to indicate the exact position. The presence of markers does not negate the requirement to notify the One-Call Center prior to excavation.



Suggestions and Reminders

DOs

- **Do**, as required by NYS Law, report immediately to **911** and facility operator any damage to underground facilities resulting in escaping flammable, corrosive, explosive, toxic liquids, gas, or electrical short.
- **Do** follow the special instructions from facility owners regarding their lines.
- **Do** keep a minimum of 4" clearance between any safely exposed underground facility and any powered equipment.
- **Do** protect and preserve the color-coded markings until those markings are no longer needed for a proper and safe excavation.
- **Do** call for a re-mark if the markings are destroyed, or removed before excavation is complete, and allow two working days to re-mark the site.
- **Do** be sure that someone other than the equipment operator, i.e. the spotter, is there to look for any sign of an underground facility.
- **Do** conduct the excavation near the underground facility carefully. Excavate by hand to be able to tell the exact location of the line and to prevent damage.
- **Do** report any damage to the facility operator. For example, cracked conduit, gouges, dents or breaks to the coatings, cable sheathes and cathodic protection anodes or wiring that may pose problems now or in the future. Allow the underground facility operators time to make repairs.

DON'Ts

- **Don't** call in a location request unless you are prepared to start on the stated commencement date.
- **Don't** assume a pipeline or cable runs straight, or is centered between permanent marker posts.
- **Don't** assume the depth of a utility. Never assume an underground facility is at the same depth throughout the entire route of an excavation.
- **Don't** excavate within the tolerance zone with mechanized equipment before verification.
- **Don't** phone in emergency locates that are not really emergencies (crews should be on site or in route).
- **Don't** work under anyone else's location request.



Exactix Online Location Request

One system for all users

Exactix is for professional excavators who will use the program frequently to request a mark-out for excavation jobs, or for jobs that occur at multiple addresses, as well as the low-volume excavator and for individuals to use for their do-it-yourself home projects.

Using *Exactix* allows you the freedom to create location requests online, 24 hours a day, 365 days a year, with no training requirements or hold time on the phone. The intuitive system guides you through the location request process easier and faster.

Advantages of placing a location request online:

- Available 24 hours a day, 365 days a year.
- No waiting. Submit location requests on your time, anywhere you have internet access.
- Print out a copy of your location request for your records.
- Google-friendly platform helps you easily find the exact address.
- Verbal transcription errors are eliminated.
- Manage all your location requests online.
- Free and easy to use.

Visit UDigNY.org for all your online support needs!



Emergency Numbers

Please take the time to write down the numbers of emergency services and facility operators you may need in the field.

Police: _____

Fire Department: _____

Natural Gas: _____

Electric: _____

The list you receive from the customer service representative can also be found in APR. Log into APR by clicking the APR icon that says, "Check the status of existing ticket," under Excavators. Enter your ticket number and phone number to locate the ticket information.

Operator:

Phone Number:

____ / _____
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The Best Practices Excavation

Here are eleven simple steps to a best practices excavation:

1. The excavator visits the site, and marks out every place he or she may be excavating with white paint, flags, or stakes.
2. The excavator fills out all the information about the excavation on a *One-Call Center Location Request Information Sheet* (see page 5), then calls in the location request to the One-Call Center.
3. The One-Call Center Customer Service Representative takes the information, and gives the excavator a File Reference Number and a list of members (facility operators) notified. The excavator writes these down on the *Location Request Information Sheet* for later reference.
4. The excavator then notifies any non-member facility operators (non-member facility operators are not contacted by the One-Call Center).
5. Each member facility operator either marks out their facilities at the work area, or determines the work area is clear, and then responds to the APR System.
6. The excavator verifies that he or she has received responses from all utilities through the APR System and takes photos of the markings for documentation.
7. The excavator begins work on the scheduled work date and time, if all the facility operators have responded, taking care to find and preserve any markings the locators have made.
8. Before beginning any excavation or demolition, the excavator identifies the tolerance zone and any place the work area crosses a gas or liquid petroleum line ("cross section areas"). When digging near a buried facility, the excavator observes the tolerance zone around that facility.
9. Before excavating or demolishing in a tolerance zone or any cross section areas, the excavator verifies the location of underground facilities by hand-dug test holes.
10. If exposing a facility, the excavator provides proper support and protection for it so the facility will not be damaged.
11. When the excavation is complete, the excavator provides proper backfill for any facilities having been exposed, and removes all utility markings.





Look Up... Look Out! For Overhead Power Lines

With the bigger equipment you're using, many backhoes, cranes and other equipment can reach some power lines.

For safety's sake, look up and look out for overhead power lines before moving your rig, raising or swinging the boom or allowing anyone to touch the rig, load or cable.

Follow These Simple Steps to Avoid Contact Overhead

- 1. Respect electricity.** Consider all lines "energized." If you have any questions, call NYSEG or RG&E. We'll be glad to work with you to ensure a safe job.
- 2. Allow plenty of clearance.** When working near an overhead power line, keep boom cable, load equipment and workers at least 20 feet away from all overhead lines (refer to next page for detailed clearance information/guidelines).
- 3. Ground your rig.** It's good practice to put an effective ground on all equipment working near overhead electric lines.
- 4. NYS Department of Labor Rule 57 (*Industrial Code Rule 57*) and OSHA standard 29 CFR 1926.1407-1411 (*Subpart cc*) must be followed** when performing work or moving materials or equipment in proximity to high-voltage power lines. Copies of *Industrial Code Rule 57* can be obtained from any office of the New York State Department of Labor. Excerpts from these rules are included on the following pages for your information.

Occupational Safety and Health Administration (OSHA) Standard 29 CFR 1926.1407-1411 Subpart CC

CRANES AND DERRICKS

General Requirements Power Line Safety Equipment Operations:

Hazard assessments and precautions inside the work zone. Before beginning equipment operations, the employer must:

Identify the Work Zone by Either:

- Demarcating boundaries (such as with flags, or a device such as a range limit device or range control warning device) and prohibiting the operator from operating the equipment past those boundaries, or
- Defining the work zone as the area 360 degrees around the equipment, up to the equipment's maximum working radius.
- Determine if any part of the equipment, load line or load (including rigging and lifting accessories), if operated up to the equipment's maximum working radius in the work zone, could get closer than 20 feet to a power line. If so, the employer must meet the requirements in Option (1), Option (2), or Option (3) of this section, as follows:

Option (1) – Deenergize and ground. Confirm from the utility owner/operator that the power line has been deenergized and visibly grounded at the worksite.

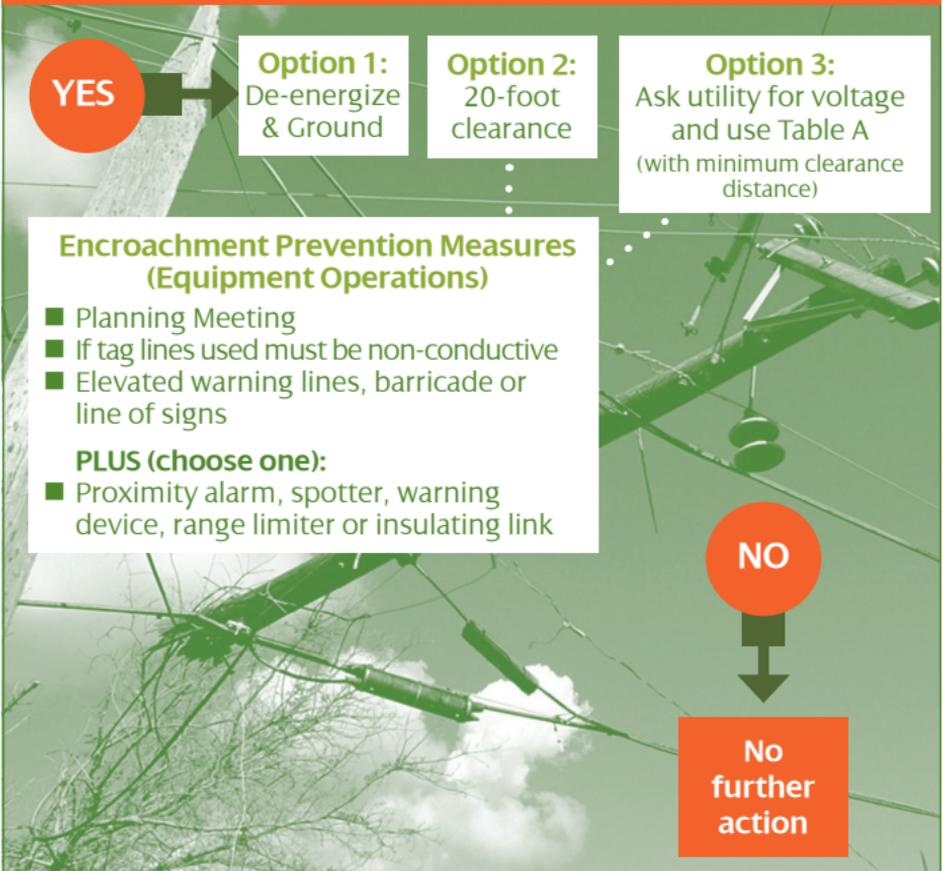
Option (2) – 20 foot clearance. Ensure that no part of the equipment, load line, or load (including rigging and lifting accessories), gets closer than 20 feet to the power line by implementing the measures specified on the next page (refer to flow chart at bottom of the next page).

Continued on next page...

Option (3) – Table A Clearance:

Voltage (nominal, kV, alternating current)	Minimum Clearance Distance (feet)
up to 50	10
over 50 to 200	15
over 200 to 350	20
over 350 to 500	25
over 500 to 750	35
over 750 to 1,000	45
over 1,000	(As established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution.)

Could You Get Within 20 Feet of a Power Line?



New York State Department of Labor Rule 57 (Industrial Code Rule 57)

57.4 DEFINITIONS

As used in or in connection with this Part (rule) the following terms shall mean:

- A. High-voltage lines.** Electrical conductors installed above ground and having a voltage differential in excess of 600 volts between any pair of conductors or between any conductor and ground. In the case of alternating current, the voltage shall be measured in R.M.S. value. All high-voltage lines shall be considered as energized high-voltage lines until assurance has been given that they are otherwise by qualified representatives of the owners or persons in charge of such lines.

EXCEPTION: This definition shall not include approved armored cable used to supply power to portable equipment and insulated power cables enclosed in approved metallic raceways.

- B. Dangerous proximity.** As defined in *Labor Law Section 202-h*, dangerous proximity shall be the distance within ten feet of high voltage lines, or within such greater distances as are set forth in the 1990 edition of the regulations of the *United States Occupational Safety and Health Administration (29 CFR Parts 1910 and 1926)*, the *New York Industrial Code (12 NYCRR Part 23)* and the *National Electrical Safety Code*, 1990 edition, published by the American Standards Institute, 11 West 42nd Street, New York, NY 10036.

- C. R.M.S. value.** The greatest effective difference of potential between any two conductors of the circuit concerned.

- D. Prohibited activity.** The operation, erection, transportation, handling, or storage of any tools, machinery, equipment, supplies, material or apparatus, or the moving of any building, if in the course of such operation, erection, transportation, handling, storage or moving of such objects it is possible to come within dangerous proximity of a high-voltage line.

57.5 PRECAUTIONARY ACTION

No individual covered by the provisions of this Part (rule) shall engage in, or require a person employed by him/her to engage in any prohibited activity unless precautionary action has been taken to protect against the danger from contact with a high-voltage line, either by de-energizing such high-voltage line and grounding it where necessary, or by other effective methods or devices which have been approved in advance for the particular case and for the particular location by the owner or persons in charge of such high-voltage lines.

57.6 EMPLOYEE INFORMATION

- A. Before allowing any employee to engage in prohibited activity, employers subject to the provisions of this Part (rule) shall:
1. Advise such employee of the dangers inherent in the operation, erection, transportation, handling, storage or moving of any tools, machinery, equipment, supplies, materials, apparatus or building in dangerous proximity to high-voltage lines.
 2. Highlight precautions which are to be taken prior to or in conjunction with engaging in such prohibited activity.
 3. Encourage employees to communicate with and advise employers or their supervising agents of conditions which would involve precautionary action by the employer as required under *Section 57.5 of this Part (rule)*.
- B. The information required under Subdivisions 1 and 3 of this section shall be provided to the employee in writing and shall be clear, concise and easily understood. Such written information shall contain the location and phone number where the employer or his/her supervising agent may be reached for the purpose of reporting conditions which would involve precautionary action.
- C. The information required under Subdivision 2 of this section shall be provided to the employee verbally or in writing and shall be related to the specific circumstances of the prohibited activity involved.

57.7 HIGH-VOLTAGE LINE PROXIMITY PROCEDURE

A. At any site where any person or equipment may possibly come within dangerous proximity of a high-voltage line, such approach shall not be made until the following procedure has been complied with:

1. The employer, contractor or other person making such approach or who is responsible for such activity, shall promptly notify the owner or person in charge of such high-voltage line in writing at least five normal work days before such approach is to be made. If the notification is made by regular mail, three extra days notice shall be given.

EXCEPTION: In any emergency situation involving imminent danger to the life, health or safety of any person, the person responsible for such activity is not required to comply with this provision.

2. Within three normal working days following the receipt of such written notice, the owner or person in charge of the high-voltage line shall respond to the person making such approach or who is responsible for such activity of the procedure to be followed prior to performing any work in dangerous proximity to such high-voltage line.
3. The owner or person responsible for the high-voltage line shall perform all necessary precautionary actions to be taken to protect against the danger from contact with such high-voltage line, either by de-energizing such high-voltage line and grounding it where necessary, or by approving in advance other effective methods or devices for the particular cases and for the particular locations.
4. The employer, contractor or other person responsible for the activity within dangerous proximity of such high-voltage line shall be responsible for all costs incurred in connection with such precautionary action including determining what precautionary measures are necessary and preparations for implementing them whether or not such precautionary measures are actually implemented.

57.8 WARNING SIGNS

- A. The owner, agent, lessee, bailee, user, or employer responsible for the operations of equipment capable of coming within dangerous proximity of a high-voltage line in the course of its operation, shall post and maintain in plain view of the operator on each piece of such equipment, an approved durable warning sign legible at a distance of twelve feet. Every such warning sign shall bear the following legend in black letters on a yellow background: "DANGER Unlawful to operate any part of this equipment within 10 feet of high-voltage lines."
- B. All posted warning signs shall specify the actual distance by which the term "dangerous proximity" is defined for the particular case and location to which this Part (rule) applies.
- C. Additional warning signs shall be placed on various parts of the equipment and at the work site providing similar warnings to others in the vicinity of the high-voltage lines.
- D. If for any reason and for any time period, the operator of the equipment is unable to assess visually the clearance of the equipment from overhead high-voltage lines, a second person shall be designated to observe the clearance and provide timely warning to the equipment operator.



57.9 CIVIL PENALTY

Any person violating any of the provisions of this section shall be liable for a penalty of not less than \$100 nor more than \$1,000 to be collected in a civil action by a summary proceeding. Any violation of this section by an officer, agent or employee shall be a violation by the employer if such employer had knowledge of and actual control over the case of such violation. Where the violation is of a continuing nature, each day during which it continues shall constitute an additional, separate and distinct offense.

Use of Explosives

The use of explosives in any construction, excavation or demolition work at or near any underground facility shall be in compliance with the applicable federal and state requirements.

- Because of the potential danger, it is important that you and your blasting expert plan your job with NYSEG or RG&E.
- Do not go ahead until you're sure blasting will not cause damage to underground gas or electric facilities.
- What happens after a blast can't always be predicted in spite of all safety precautions. Watch out for lengths of detonator wire thrown over electric lines – this can be extremely dangerous.

If Power Line Contact is Made

1. **Keep everyone clear of the rig**, its load or fallen wires.
2. **Call NYSEG** immediately at **800.572.1131**
Call RG&E immediately at **800.743.1701**
3. **The rig operator should stay with the machine** and move it away from the contacted line if possible.
4. **If the operator must leave the rig, (for example, because of fire) he or she should jump clear** and should never climb down so as to form a contact between the machine and the ground. He or she should then move away using shuffling steps to keep both feet in contact with the ground.
5. **Don't touch anyone in contact with the rig**, the load or fallen wires.
6. **If a victim isn't breathing when rescued**, start cardiopulmonary resuscitation (CPR) as soon as the area is made safe and call **911**.



Call **811**
Call UDig NY **800.962.7962**
Visit **UDigNY.org**



NYSEG

An AVANGRID Company

NYSEG Electricity Interruption/Emergency
800.572.1131
NYSEG Natural Gas Odor/Emergency
800.572.1121

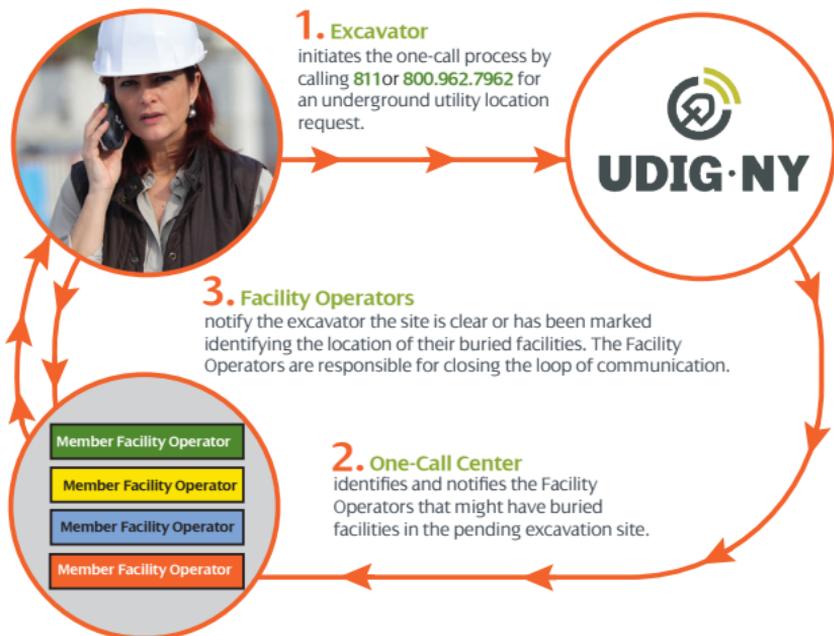


RG&E

An AVANGRID Company

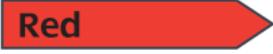
RG&E Electricity Interruption/Emergency
800.743.1701
RG&E Natural Gas Odor/Emergency
800.743.1702

Closing the Loop

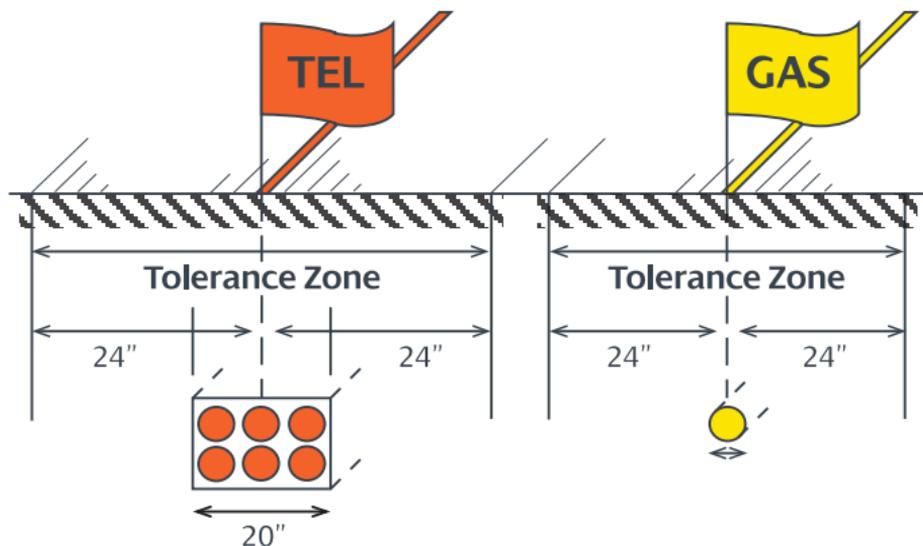


APWA Uniform Color Codes

For Marking Underground Utility Lines

	Proposed Excavation
	Temporary Survey Markings
	Electric Power Lines, Cables, Conduit and Lighting Cables
	Gas , Oil, Steam, Petroleum and Gaseous Material
	Communications , Alarm, Signal Lines, Cables or Conduit
	Potable Water
	Reclaimed Water, Irrigation and Slurry Lines , Radioactive Material
	Sewers and Drain Lines

Measuring the Tolerance Zone





2022 Excavator Manual



Safe Digging Starts Here

UDig NY

*(serving all of New York excluding
NYC and Long Island)*

811 or 800.962.7962

UDigNY.org

New York 811

(serving only NYC and Long Island)

811 or 800.272.4480

newyork-811.com