

EXCAVATOR MANUAL

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

Know what's **below**.



Call before you dig.

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

Outside N.Y.C. & L.I. call 811 or 800-962-7962 www.digsafelynewyork.com

In N.Y.C. & L.I. call 811 or 800-272-4480



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
- New York City & Long Island One Call Center 104-70 Queens Blvd, Suite 312 Forest Hills, NY 11375 Administration: (800) 524-7603 www.nycli1calldsi.com
- Dig Safely New York
 5063 Brittonfield Parkway
 East Syracuse, NY 13057
 Administration: (315) 437-7394
 www.digsafelynewyork.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: www.npms.rspa.dot.gov



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1. Excavator

initiates the one-call process by calling 811 or 800-962-7962 for an underground utility location request.

Know what's below. Call [11] before you dig

Calling 811 automatically connects excavators with the local One-Call Center.

3. Facility Operators

notify the excavator the site is clear or has been marked identifying the location of their buried facilities. The Facility Operators are responsible for closing the loop of communication. Dig Safely. **New York** 800-962-7962 ONE-CALL CENTER

Member Facility Operator

Member Facility Operator

Member Facility Operator

Member Facility Operator

2. One-Call Center

identifies & notifies the Facility Operators that might have buried facilities in the pending excavation site.

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 can help save you and your company from unexpected downtime, loss of revenue and injury.

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

Who We Are...

Dig Safely New York and the New York City & Long Island One-Call Center are a link between you - the excavator, and the utility owner operators. We take your calls and transfer the information to the utility operators.

The New York City & Long Island One-Call Center provides service for all five boroughs of New York City as well as Nassau & Suffolk Counties on Long Island. Dig Safely New York provides service for the rest of the state.

<u>Dig Safely New York & the New York City & Long Island One Call Center do not mark lines!</u>

Call Center Hours

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

Call Center Operation

After you have given all of the appropriate information to the one-call operator, (Customer Service Representative), this is what happens...

- 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.
 Write them down so you can check for a positive response.
- 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.
- 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!

Dig Safely New York

800-962-7962 www.digsafelynewyork.com

New York City & Long Island One Call Center

800-272-4480

www.nycli1calldsi.com

- You must call for a location request <u>at least 2 working days but not more than 10 working days</u> before any excavation starts. (Excluding holidays & weekends).
- You must call regardless of where the excavation 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.
- 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 they know where buried facilities are located.
- Make sure you have a proper location request, don't rely on old marks, or another excavator's marks or stake out request.
- 6. Mark out the area you plan to excavate with White Paint, Flags, or Stakes. (See page 5 for details.)
- When Investigators from the Public Service Commission (P.S.C.) inspect an excavation 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 4).
- Part 753 defines an <u>emergency</u> 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 notify your one call center with the location of the emergency excavation as soon as possible!

Excavation

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

Excavations 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
- Auguring
- Moving Earth

- Drilling
- Grading
- Trenching
- Digging
- Scraping
- Razing
- Dredging
- Tunneling
- Wrecking



Location Request Information Sheet

When you call your One-Call Center you will need to provide the following information. Copies of this form in pads are available from your One-Call Center for field use.

_ Today's Date:		
State:	Zip:	
Time:		
days notice, not includ	ing the day you call.)	
County:		
rmation:		
		☐ No
	-	
_		
_		
	State: Time: days notice, not include County: ormation: Are You o	

Dig Safely New York

811 or 1-800-962-7962 www.digsafelynewyork.com

New York City & Long Island One Call Center

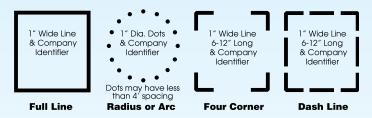
1-800-272-4480 www.nycli1calldsi.net

Guidelines for Marking Proposed Excavations

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

These illustrations are examples of how excavators should <u>mark the area of proposed excavation</u>. <u>Use white marking products</u> (paint, flags, stakes, whiskers or combination) to identify the excavation site.

Single Point Excavations Markings



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

- Before you begin any non-emergency excavation you must call your One-Call
 Center and make a location request, at least two but not more than ten working
 days, before your excavation begins (not including the date of your call).
 - This will give the facility operators at least two working days to send you a positive response. That response will tell you they either have facilities in the proposed dig site area and have marked them out, or they do not have facilities in the proposed dig site area.
- 2. Do not start excavating before your stated commencement date and time!
- Weekends and holidays are not working days and are not counted in the 2 to 10 days between the date of your location request and your commencement date (See Holidays below).
- If your excavation 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.
- If the excavation work is completely cancelled, that must be reported to the One-Call Center.
- 6. Once excavation has begun, the location request is good for the life of the excavation. The excavator is responsible for maintaining the marks from the stated commencement date. (See page 8)

Holidays:

New Year's Day

Martin Luther King Day

President's Day

Memorial Day Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Christmas Day

January 1st

3rd Monday in January

3rd Monday in February

Last Monday in May

4th of July

1st Monday in September

2nd Monday in October

November 11th

4th Thursday in November

December 25th

Confirm The Utility Response

- Each facility operator identified on your Location Request Ticket is required to contact
 you prior to your start date and inform you either their facilities in your excavation area
 have been marked or they have no facilities in the proposed excavation area.
- Remember, facility operators will only mark out facilities for which they are responsible.
- Facility operators owe you a positive response, and you are responsible for making sure each operator on your ticket has responded.
- 4. By law, a facility operator can delay marking out your excavation site a maximum of two (2) working days. However, any delay of more than two (2) working days will require your consent.
- 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. If you do not have the contact number, please call your One-Call Center.
- It is important you provide accurate field contact numbers when you call the One-Call Center for a Location Request; because this is the number facility operators will call if they need to contact you regarding your location request.



Respect The Marks

- 1. You are responsible for maintaining the marks set down by facility operators at your site.
- Before you begin your excavation, 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 will cause the removal or disturbance of markings, establish offset marks in order to maintain a reference point for those underground facilities.
- Make sure everyone involved in your excavation 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.
- If marks have faded or been compromised to the point where proper and safe excavation is no longer possible, call your One-Call Center and make a request for a re-mark.
- 8. It is recommended you request re-marking if your project is interrupted for more than 10 working days.
- 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 <u>Common Ground Alliance (CGA)</u> Best Practices for complete details. *www.commongroundalliance.com*

- Utility lines should be indicated by markings using current APWA color codes.
 Markings should be 18"-24" in length and 2" in width.
- 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'.
- 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.
- 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.
- 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, (if placed directly over the facility).

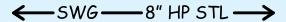


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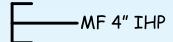
Guide To Marks

The following is only a guideline. Refer to the current <u>Common Ground Alliance (CGA)</u>
<u>Best Practices</u> for complete details. *www.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/FPG

Conduit Or Duct Markings



Marking Buried Splices, Valves, Manholes



Corridor Marking

Identification when number of facilities is not readily known

PG&E 12" CDR

Dig With Care

- 1. Before you use powered equipment within the tolerance zone (see page 13), you must:
 - Verify the location, type, size, direction-of-run and depth of the facility.
 - For 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.
- 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.
- 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.

Continued on next page...

Dig With Care (cont...)

- 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.
- 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.



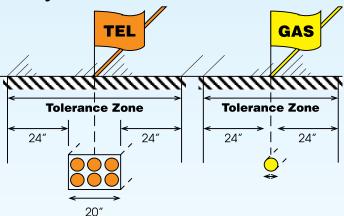
Tolerance Zone

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.

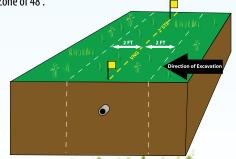
For example:

Measuring The Tolerance Zone



The facility at left is marked as being 20- inches 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

- When excavating close to an underground facility, it is a good practice to have a spotter assist and guide the machine operator.
- 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.
- 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.
- You should keep the emergency number of your local facility operators readily available. (See page 19)
- 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.
- 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.
- Do not try to extinguish a gas burning fire, unless there is a threat to life.



Leak Recognition and Response

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

- Smell: Natural gas is colorless and odorless. A distinctive, pungent odor is 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 19) 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:

 A) Proceed to evacuate their employees and all other endangered persons from the immediate vicinity to the best of their ability and;

B) Immediately notify the local police and fire departments 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 & 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 & government oversight
- Pipeline markers and facility mapping
- Public education programs

Pipeline Locations

Since pipelines are under-ground, 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 & Reminders

- Do report immediately (to 911 and facility operator) any damage to underground facilities resulting in escaping flammable, corrosive, explosive, or toxic liquids or gas.
- Do follow the special instructions from facility owners regarding their lines.
- Do keep a minimum of 4" clearance between any underground facility and the cutting edge of 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'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 prior to verification.
- Don't phone in emergency locates that are not really emergencies.
- Don't work under anyone else's location request.



i-notice Internet Notification

An **i-notice** is a location request created and entered into your One Call Center's database through the internet by an excavator at a remote location. An **i-notice** will satisfy all the requirements of a 'dig notification' as mandated in N.Y. State Code Rule 753. Only regular location requests (two to ten full working days of notification) can be entered via the internet as an **i-notice**. Ask us about submitting emergency i-notice's.

All You Need:

- Access to the internet.
- An assigned username and password.
- An e-mail account.
- Microsoft Internet Explorer 4.0 or newer.

Entering an i-notice:

When you enter an i-notice over the internet you'll need the same information you give your One-Call Center when you call.

Once the **i-notice** has been completed, a chance to review the location request and make additions, changes or corrections is available prior to confirming the data is correct. Upon review, the **i-notice** is transmitted into the system for distribution to the facility operators with underground facilities in the dig site area.

Advantages of an i-notice:

Excavators can now create their own location request on the internet at their One-Call Center's website (see inside cover).

- This service is available 24 hrs. a day, 7 days a week, 365 days a year!
- A printed copy of the i-notice for the excavation is available for your records.
 It lists the facility operators, (including telephone contacts when available)
 who have been notified of the location request.
- After you have completed your first i-notice, all of your significant company information will be automatically entered on each subsequent i-notice, saving time.
- No waiting on the telephone during peak periods.
- Electronic maps are available to pinpoint dig sites.
- Verbal transcription errors can be eliminated.
- Excavator's copy of i-notice can be e-mailed to remote sites.
- Self-paced tutorials are available at our website. Site training is available on request at your facility.
- The i-notice service is FREE!

To Sign Up:

Simply send an e-mail to your One-Call Center expressing your interest.

Emergency Numbers

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

Police:			
Gas:			
The list you receive from the customer service representative can also be found on ou website at <i>www.digsafelynewyork.com</i> by going to Excavators> Stake out Respons worksheets>then click on the county>then click on the correct city, town or village and a list will appear with all the names and contact numbers.			
Operator:	Phone Number:		
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The Perfect Excavation

Does it exist? We think it does... in fact it happens all the time! Here are ten simple steps to the perfect excavation:

- The excavator visits the site, and marks out every place he may be excavating with white paint, flags, or stakes.
- The excavator fills out all the information about the excavation on a One-Call Center Location Request Information Sheet, (see page 4), then calls in the location request to the One-Call Center.
- 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.
- The excavator then notifies any nonmember facility operators if known, (nonmember facility operators are not contacted by the One-Call Center).
- Each member facility operator either marks out their facilities at the work site, or determines the site is clear.
- Each member facility operator notifies the excavator they have finished the marking, are clear or require additional information or a site meeting.
 - The excavator then checks off each facility operator on his Location Request Information Sheet with the results.
- 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.
- When digging near a buried facility, the excavator observes the tolerance zone around that facility.
- If exposing a facility, the excavator provides proper support and protection for it so the facility will not be damaged.
- When the excavation is complete, the excavator provides proper backfill for any facilities having been exposed, and removes all utility markings.

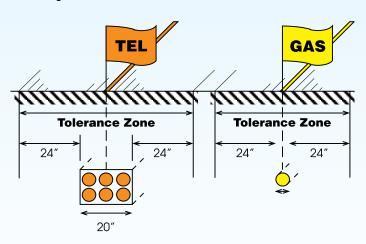


APWA Uniform Color Codes

For Marking Underground Utility Lines

White	Proposed Excavation
Pink	Temporary Survey Markings
Red	Electric Power Lines, Cables, Conduit & Lighting Cables
Yellow	Gas, Oil, Steam, Petroleum & Gaseous Material
Orange	Communications, Alarm, Signal Lines, Cables or Conduit
Blue	Potable Water
Purple	Reclaimed Water, Irrigation & Slurry Lines
Green	Sewers & Drain Lines

Measuring the Tolerance Zone



Dig Safely New York 811 or 1-800-962-7962 www.digsafelynewyork.com New York City & Long Island One Call Center 1-800-272-4480 www.nycli1calldsi.net