

# New Hampshire Underground Damage Prevention Program



Presented by Bryan Connelly



# Overview of the Underground Damage Prevention Course

The purpose of this course is to mitigate damage to underground facilities while protecting the public, operators, and excavators from harm.

- Department of Energy, Enforcement Division

- Dig Safe: what it is, what it isn't

- Laws and Rules Say

- Premarking and Marking Standards

- Tolerance Zone

- What to do if you damage an underground facility

- Keys to a Safe Dig



# N.H. Dept. of Energy

Underground  
Damage Prevention

Natural Gas

Liquid Propane

Division of  
Enforcement

Electric Utilities

Safety &  
Cybersecurity

# Ways to Communicate

<https://www.energy.nh.gov/>



New Hampshire  
Department of Energy



Home Consumers Utilities & Providers Renewable Energy Energy Information

Enforcement

Rules and Regulatory

- > Underground Damage Prevention
- > Pipeline Safety
- > Electrical Safety and Reliability
- > Emergency Preparedness and Emergency Response
- > Physical and Cyber Security
- > Engineering, GIS and Other Support

How Can We Help You Today?

I am looking to

select an option



## Welcome

*The Department of Energy was established effective July 1, 2021. It was created by the NH legislature to promote and coordinate energy policies and programs in the state. The Public Utilities Commission, Site Evaluation Committee, Office of Consumer Advocate and the Energy Efficiency & Sustainable Energy Board are administratively attached.*

https://www.nh.gov/energy/underground-facility-damage-prevention/penalties-penalties



Overview



Violations & Penalties



Education & Training

Form 3NU-0401  
 NEW HAMPSHIRE DEPARTMENT OF ENERGY  
 REPORT OF PROBABLE VIOLATION OF UNDERGROUND UTILITY REGULATIONS AND/OR DAMAGE TO UNDERGROUND FACILITIES  
**Non-Utility Report**  
 (In compliance with Pub 806.05)

INCIDENT DATE: (mo/day/yr) [ ] [ ] [ ] [ ] [ ] [ ] TIME: [ ] [ ] a.m. [ ] [ ] p.m.  
 REPORT DATE: (mo/day/yr) [ ] [ ] [ ] [ ] [ ] [ ]

PERSON REPORTING: (FACILITY OPERATOR, EXCAVATOR OR ANY OTHER PARTY) AREA CODE 7 DIGIT NUMBER EXT.  
 Name: [ ] Home No. [ ] [ ] [ ] [ ] [ ] [ ]  
 Company: (if applicable) [ ] Work No. [ ] [ ] [ ] [ ] [ ] [ ]  
 Address: [ ] Fax No. [ ] [ ] [ ] [ ] [ ] [ ]  
 City: [ ] Cell No. [ ] [ ] [ ] [ ] [ ] [ ]  
 State: [ ] Zip Code: [ ] [ ] [ ] [ ] [ ] [ ]

UTILITY COMPANY IMPACTED: [ ]  
 Was the utility notified of the problems?  
 Yes, please provide name of person spoken to: [ ]  
 No

LOCATION OF VIOLATION / DAMAGE: GPS COORDINATES:  
 Address: [ ] Long: [ ] Lat: [ ]  
 City: [ ]  
 State: [ ] Zip Code: [ ] PUBLIC WAY  RIGHT OF WAY   
 EASEMENT  PRIVATE PROPERTY

DESCRIBE THE REASON FOR THIS COMPLAINT: (If additional remarks are necessary, or if you have pictures or other evidence to fully describe the incident referenced below, please attach a separate sheet).

DAMAGE / INJURY: Yes  No

PLEASE CHECK ONE OR MORE OF THE FOLLOWING:

<input type="checkbox"/>	1. Notification completed,	DIG-SAFE NUMBER (if known):	[ ]
<input type="checkbox"/>	2. Notification completed, marked, markings not maintained	Operator's markings were incorrect due to:	[ ]
<input type="checkbox"/>	3. Notification completed, location was not marked	<input type="checkbox"/>	13.a. LOCATOR ERROR
<input type="checkbox"/>	4. Notification completed, marked, damage occurred	<input type="checkbox"/>	13.b. INCORRECT RECORD
<input type="checkbox"/>	5. Excavating outside the pre-marked area	<input type="checkbox"/>	13.c. NO RECORD
<input type="checkbox"/>	6. Excavation classified as EMERGENCY SITUATION	<input type="checkbox"/>	14. Facility operator failed to mark in a timely manner
<input type="checkbox"/>	7. Excavator failed to observe 18-in. tolerance zone	<input type="checkbox"/>	15. OTHER
<input type="checkbox"/>	8. Excavator failed to notify nonmember facility operator		
<input type="checkbox"/>	9. Excavating on an expired ticket		
<input type="checkbox"/>	10. Procedures for notification not followed DIG-SAFE NOT NOTIFIED		
<input type="checkbox"/>	11. Failure to notify of damage		
<input type="checkbox"/>	12. Pre-marked	Re Yes <input type="checkbox"/> No <input type="checkbox"/>	

Signature: [ ] Title: [ ]



Dove

Portsmouth

Keene

Derry

Salem

Utilities By Location

# New Hampshire Excavator Manual

The current edition of the New Hampshire Excavator Manual is available online.

- Information is kept current on the NH Department of Energy Website
- Not all Cities and Towns are required to be a members of Dig Safe, Inc.

- Page 28-30 List of Members that will be notified.
- Page 31-58 list of towns & utilities

## NEW HAMPSHIRE EXCAVATOR MANUAL



**Remember to Contact**



**before you  
Blast, Demo, Drill or  
Excavate**

*What you don't know CAN hurt you*

***It's easy... It's free...***

**It's the Law**

INTERNET:

[www.digsafe.com](http://www.digsafe.com)

24 Hours a day, 7 days a week  
NO EMERGENCY CONTACTS

PHONE:

811

888-DIG-SAFE (888-344-7233)

Monday thru Friday, 6:00 am to 6:00 pm

AFTER 6:00 PM:

EMERGENCY CALLS ONLY

# What the Law Says

## RSA 374: Underground Damage Prevention System

- No Excavation within 100' of an Underground Facility. 374:51
- Emergency situations for which notice of excavation is not required. 374:51
- Establishes when the excavator must notify Dig Safe. 374:51
- Definitions for Excavation, Excavator, Operator, Underground facility and the Dig Safe System. 374:48
- Establishes regulations for the operator to mark its facilities. 374:53



# What The Rules Say

- Purpose and Application 801
- Definitions 802
- System Requirements aka Duties of the One Call Center (Dig Safe Systems Inc) 803
- Duties of Operator 804
- Duties of an Excavator 805
- Marking Standards and Tolerance Zone 806
- Enforcement Procedures 807



# 802 DEFINITIONS:

"Operator" means a public utility

Electric

Water

Cable TV

Liquified Petroleum

Natural Gas

The background image shows a construction site with a deep trench. Several workers in safety gear are visible, along with various tools and equipment like a laptop, a hard hat, and a clipboard. The ground is dirt and there are some cables or pipes in the trench.

# 802 DEFINITIONS:

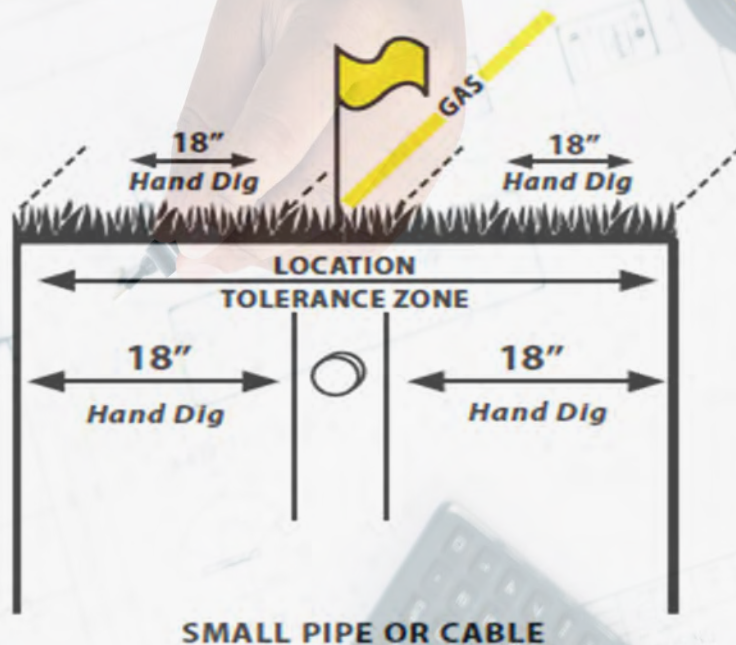
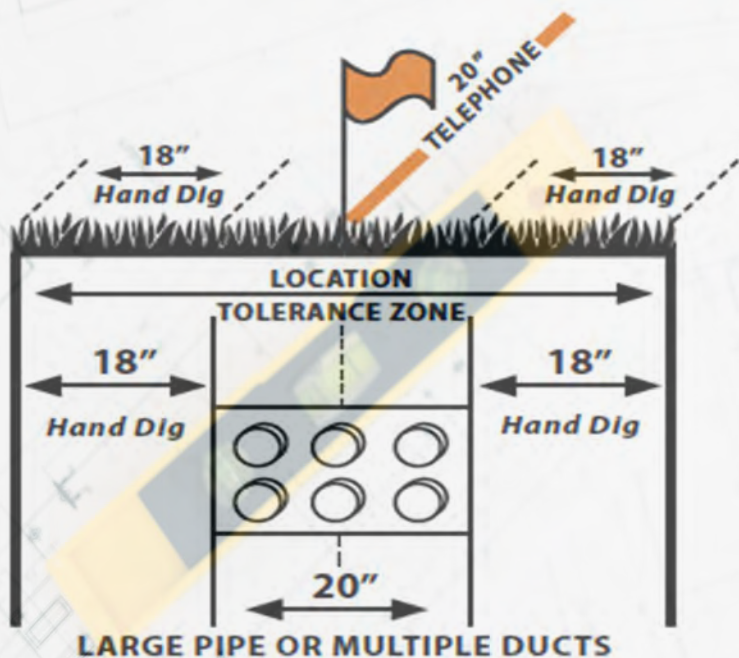
"Damage" means any impact or exposure that results in the need to repair an underground facility

- weakening or the partial or complete destruction of the underground facility
- the protective coating, lateral supports, corrosion control, or the housing for the line of an underground facility.

# 802 DEFINITIONS:

“Tolerance Zone” is the area surrounding an underground facility, which is equal to the width of the underground facility plus 18 inches measured horizontally on either side of the underground facility.

## TOLERANCE ZONE





# 805 DUTIES OF THE EXCAVATOR

No excavation within 100 feet of an underground facility

Not less than 72 hours, no more than 30 days

Premark the area of proposed excavation

Make sure that you are on the Dig Safe ticket



# 805 DUTIES OF THE EXCAVATOR

Use of Reasonable Care to protect the underground facility from damage.

- To locate the underground facilities an excavator must hand dig, soft dig or vacuum excavate in the Tolerance Zone except to remove pavement or concrete.

If in an emergency situation, an excavator may begin excavation without notifying Dig Safe first.

- Must notify Dig Safe at the earliest practical moment

Rules surrounding blasting while excavating



# Emergency Situations:

## The Only Exception to the 72-hour rule

### **PUC Rule 802.04**

“Emergency situation” means a sudden or unexpected occurrence involving a **clear and imminent** danger demanding **immediate action** to prevent or mitigate loss of, or damage to, life, health, property, or essential public services.”



# Key Elements For a SAFE EXCAVATION

**Plan Ahead**

**Premark Before Calling**

**Obtain Dig Safe ticket**

**Wait 72 hours**

**Maintain the Marks**

**Practice Reasonable Care**

**Call and Update Ticket before day 27**

**Notify Utility of Damage**

**Notify of Damage form SNU**

# Communication, Cooperation, Education

Dig Safe System, Inc. - MA ME NH RI VT - Call 811



facebook

twitter

YouTube

Home

Submit a Ticket

Membership ▾

Laws & Enforcement ▾

Services ▾

Contact

Exactix

How it Works

FAQ's

Public Awareness

Education

Events

Document Retrieval

**Get Your Dig Safe Tickets Online With Exactix!**

**Sign up or Sign In now**

Submit Regular and Emergency tickets in MA, ME, NH, RI and VT.

It's easy to create, renew, print, and organize Dig Safe tickets with your Exactix dashboard.

Check out our **Video Tutorials and Web User Guide** for step-by-step instructions.

## What is Dig Safe® ?

Planning home improvements? Planting a tree? Installing a fence or deck? Whether you do it yourself or hire a professional, a safe job starts with a call to Dig Safe® at 811.

[Click here for our homeowner video.](#)

Dig Safe® is a not-for-profit clearinghouse that notifies participating utility companies of your plans to dig. In turn, these utilities (or their contract locating companies) respond to mark out the location of their underground facilities. Dig Safe is a free service, funded entirely by its member utility companies. (Note: Dig Safe does not mark utility lines.)

Lisa Powers, Public Relations Director. 781-721-1191

Dig Safe for even small projects, a common area.

It's important to know what's below. Call 811 to avoid utility service disruption to an entire neighborhood, harm to you and those around you, as well as fines and repair costs.





# WHO IS DIG SAFE?

- Free service for anyone to use
- Funded by Member Companies
- An Office that Makes Call Only

- Private, not-for profit organization
- Located in Wilmington, MA
- Serves 5 New England states



**Dig Safe** does not

# Dig Safe does not notify non-member facility owners including:

- Towns or Municipal who are not members, for example: water, sewer, electric and drainage will not be notified by Dig Safe call center.
- **-You must contact them directly.**
- ALSO: Privately-owned facilities should be marked by their owner or private locator.
- Go to [digsafe.com](http://digsafe.com) for a current list of member municipalities, and a list of private locators for your area.

# Dig Safe Ticket Scheduled

Calling at Noon

## July

Sun.

Mon.

Tues.


Wed.

Thurs.

Fri.

Sat.

					1 Call Dig Safe	2 X
3 X	4 X	5	6	7 Ticket Effective	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26 Call to Renew Ticket	27	28	29	30 Ticket Expires



# Marking Is Not Infallible

## Example of Some Limitations:

- Records are not reliable
- The deeper the facility,  
the less accurate the marks
- Locators can't determine depth accurately.
- Flags may be moved
- Marks may have disappeared



# Are You Excavating?

RSA374:48, Section III

*“Excavation” - Any operation ... in which earth, rock or other material in the ground is moved, removed, or otherwise displaced by means of any tools, equipment or explosive, including but not limited to drilling, grading, boring, milling, trenching, tunneling, scraping, tree and root removal, cable or pipe plowing, fence or signpost installation, pile driving, wrecking, razing, rending or moving any structure or mass material...”*



## This Does Not Include...

Tilling of soil for agricultural purposes

Landscaping or maintenance of residential property with non-mechanized equipment

mechanized equipment intended to cut vegetation, lawn edging, aeration, and de-thatching,

# Will You Be On Territory Covered By The Law?

Do you plan to excavate within 100 feet of underground facilities on:

- ▶ Private Property
- ▶ Public Way
- ▶ Right-of-Way
- ▶ Easement
- ▶ Public Street or
- ▶ Any Other Public Place

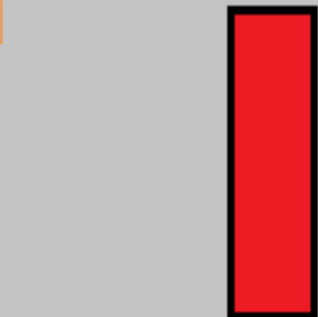




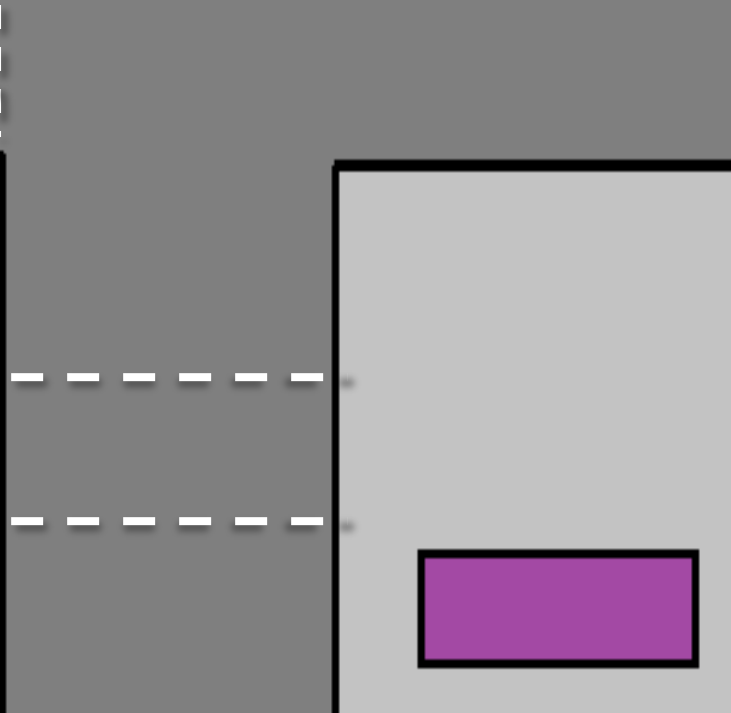
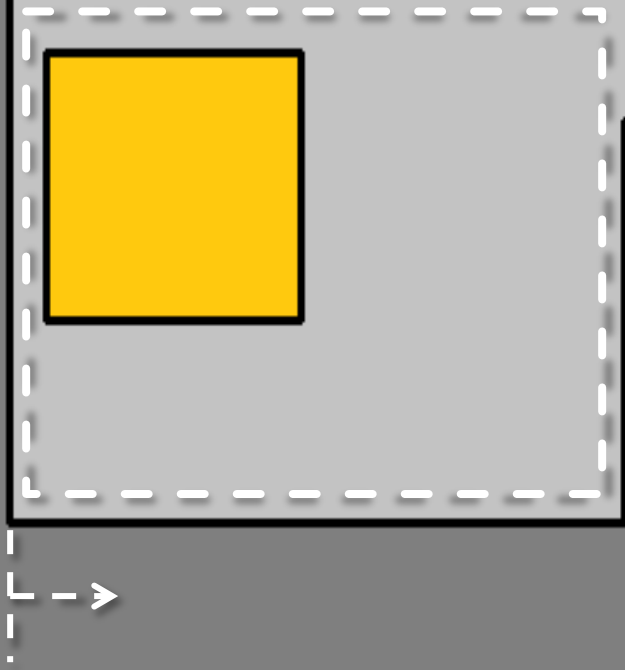
# Will You Be On Territory Covered By The Law?



Excavator was 57" away from underground facility



Premarking





# Premarkarking





**Where excavator drilled.**

**White premark where excavator planned to drill.**



# Rochester Hit No Fire

**Drilled through  
high pressure gas  
main.**

# Color Code Used for Marking



Electric



Gas - Oil - Steam



Communications



Potable Water



Reclaimed Water



Sewer



Temporary Survey



Pre-Mark

# NH Positive Response

**NO CABLE**

**NO ELECTRIC**

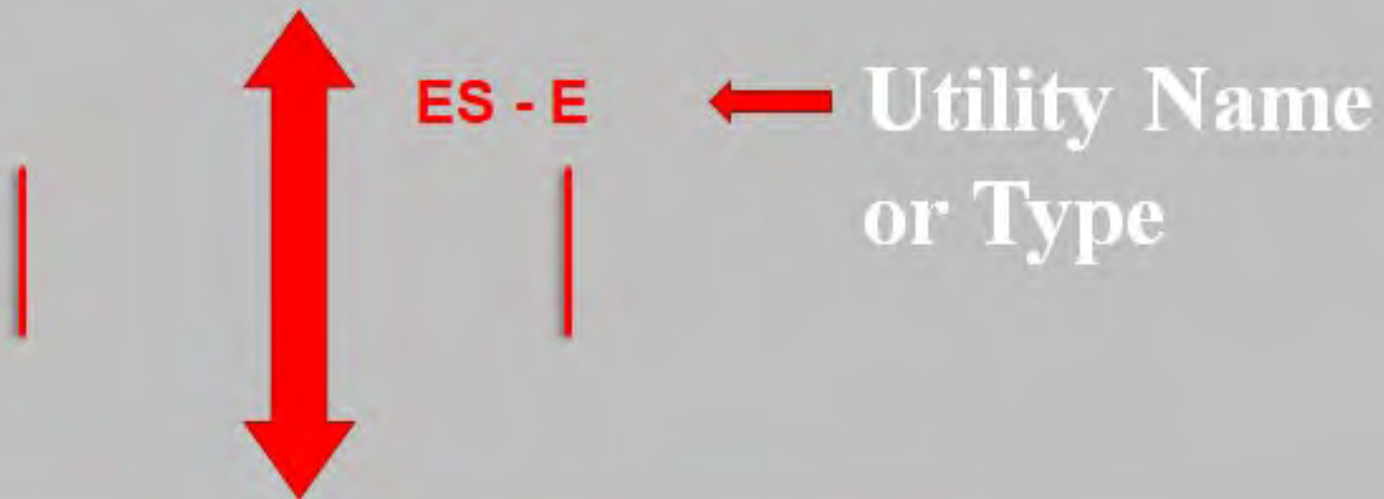
**NO GAS**

**NO PHONE**





# Single Cable or Wire

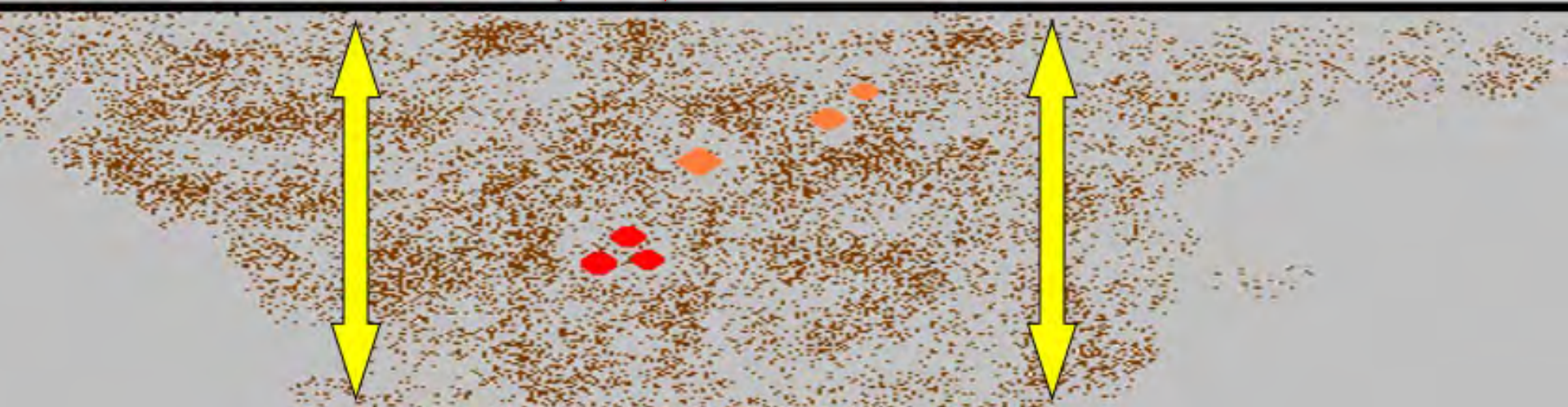
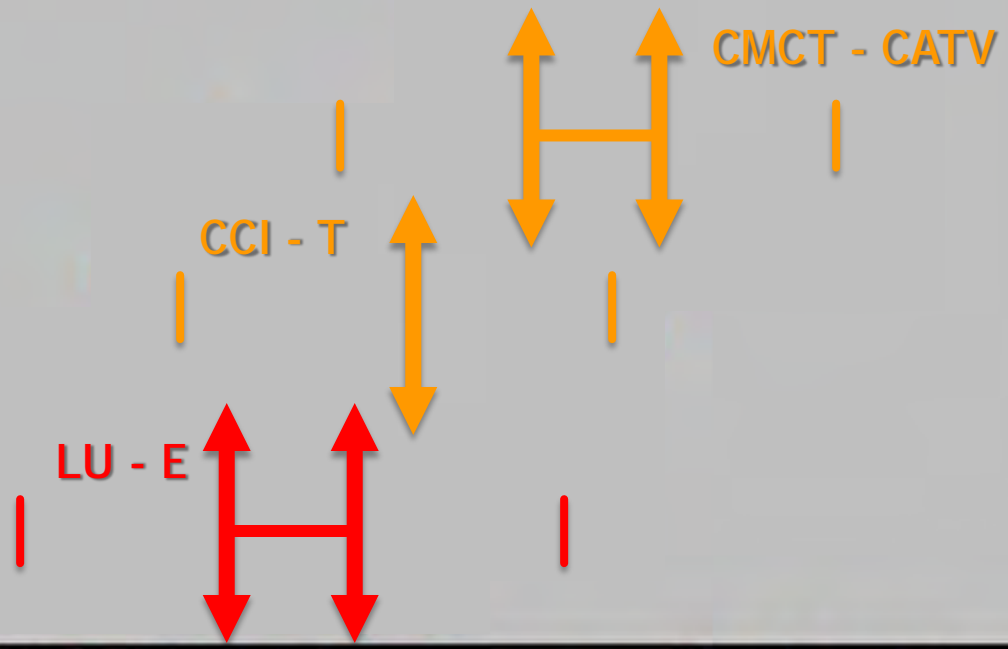




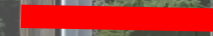
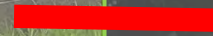
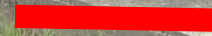
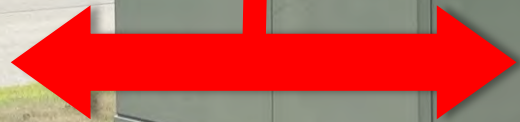
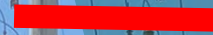
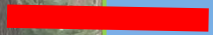
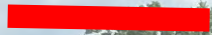
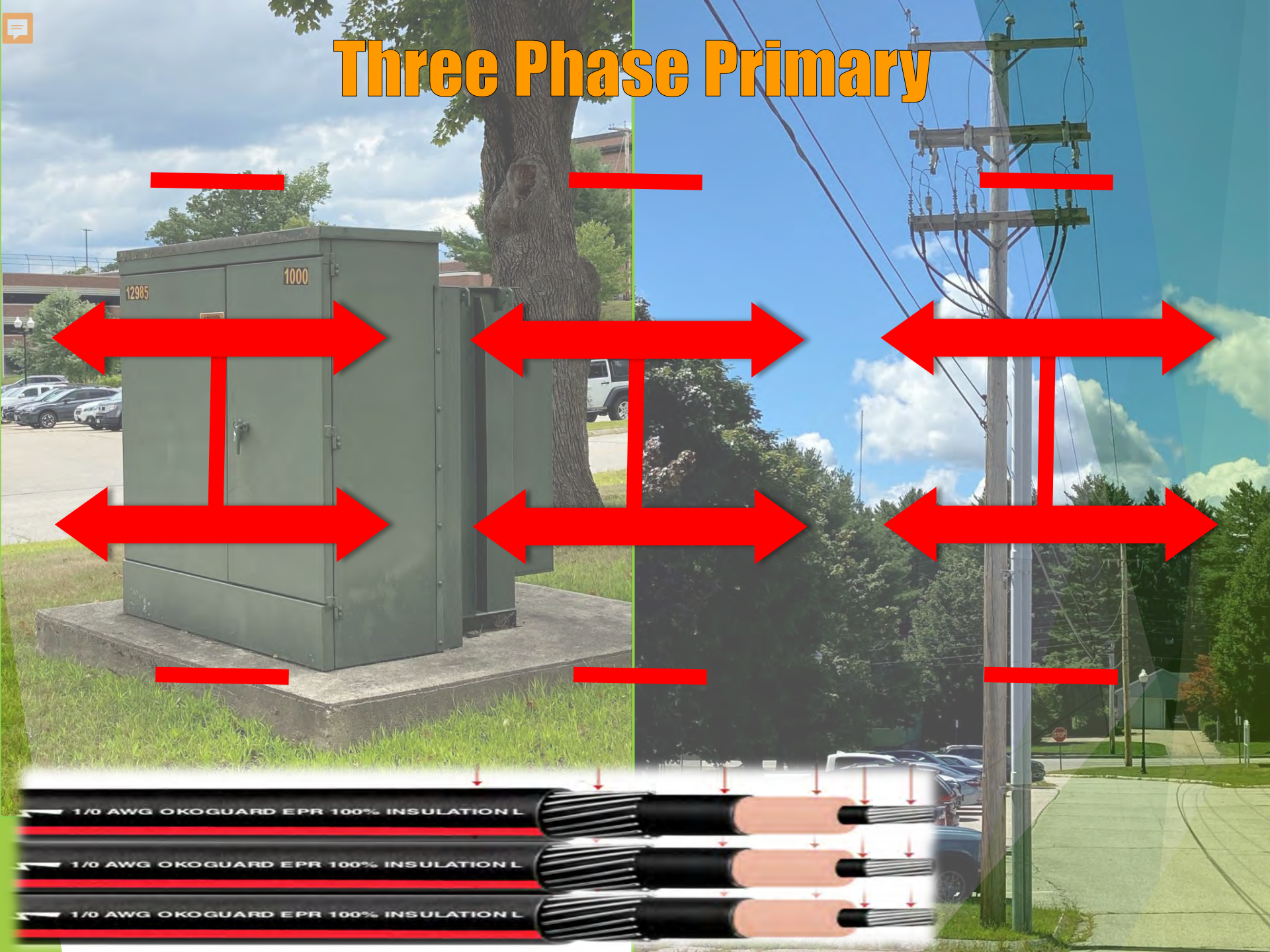
# Single Phase Primary or Secondary



# Multiple Cables



# Three Phase Primary



1/0 AWG OKOGUARD EPR 100% INSULATION L

1/0 AWG OKOGUARD EPR 100% INSULATION L

1/0 AWG OKOGUARD EPR 100% INSULATION L

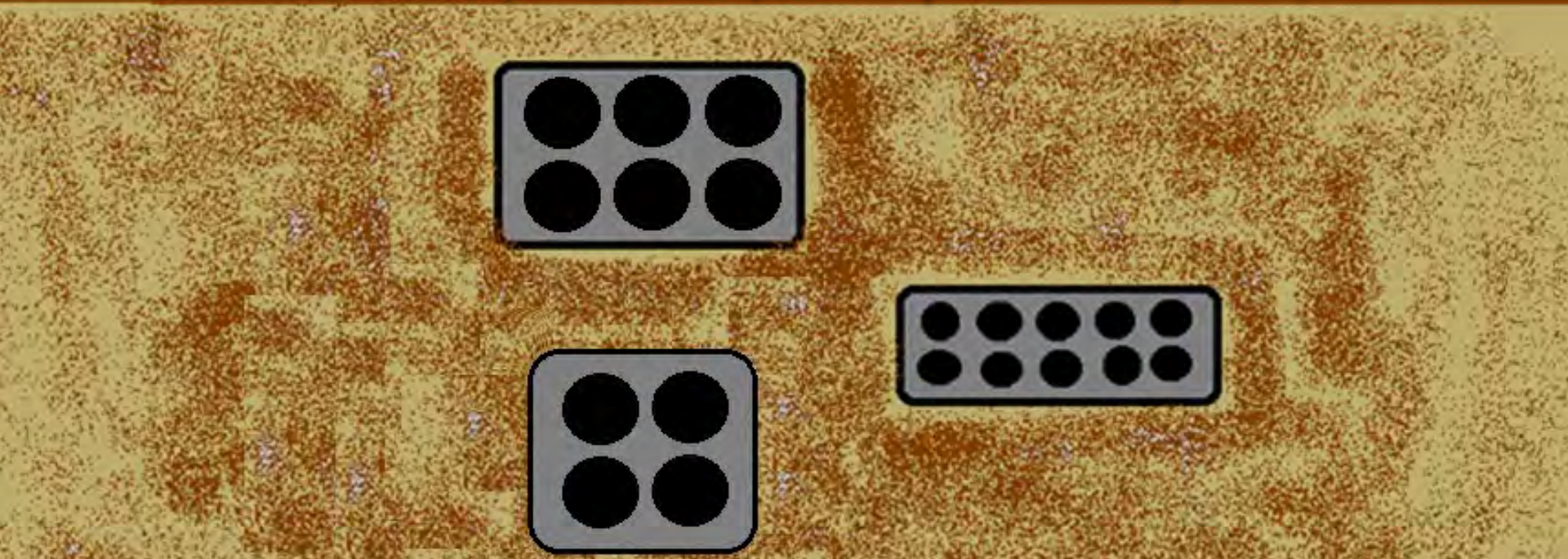
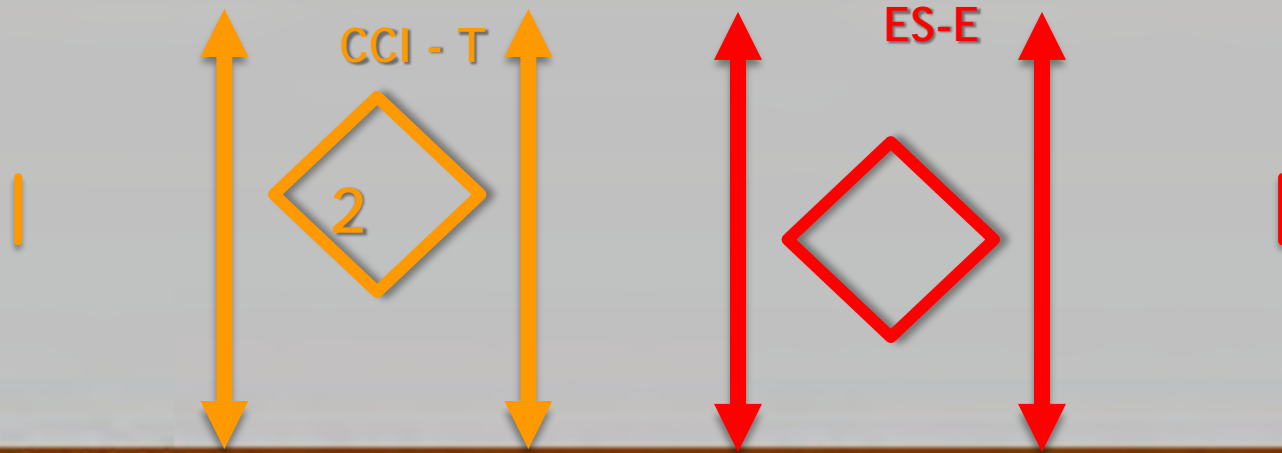


# Three Phase Primary in a Conduit

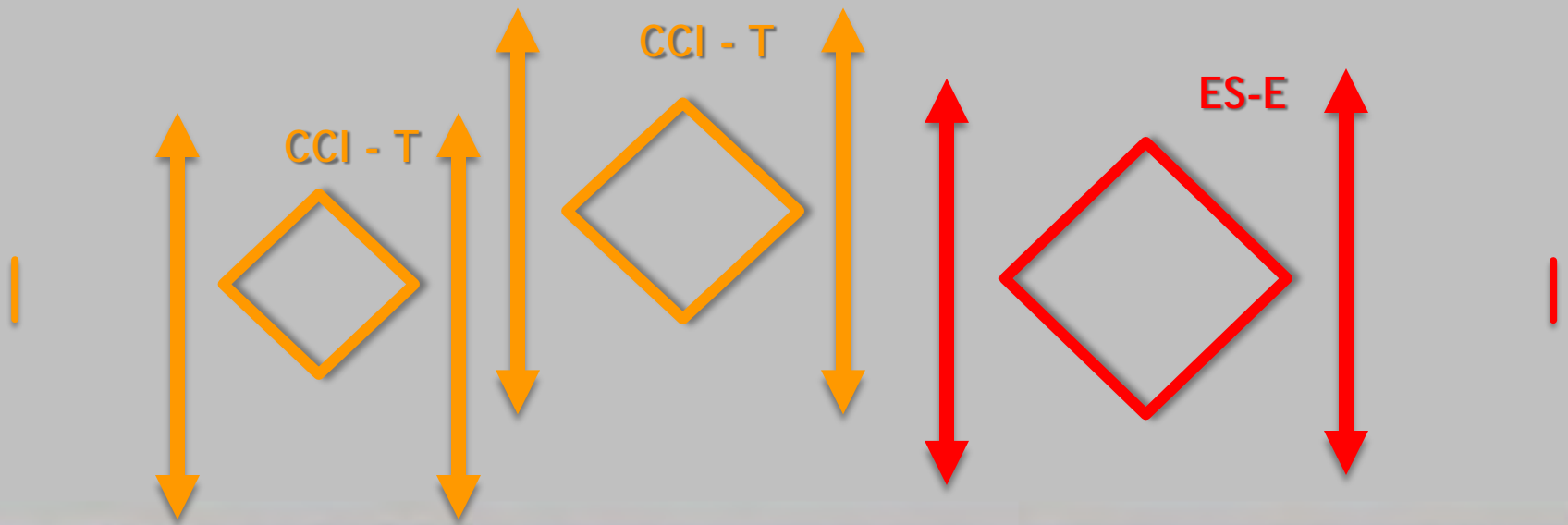


LU - E

# Multiple Duct Bank Marking



# Multiple Duct Bank Marking





# Electric Duct Bank Marks



Approximate  
width of duct

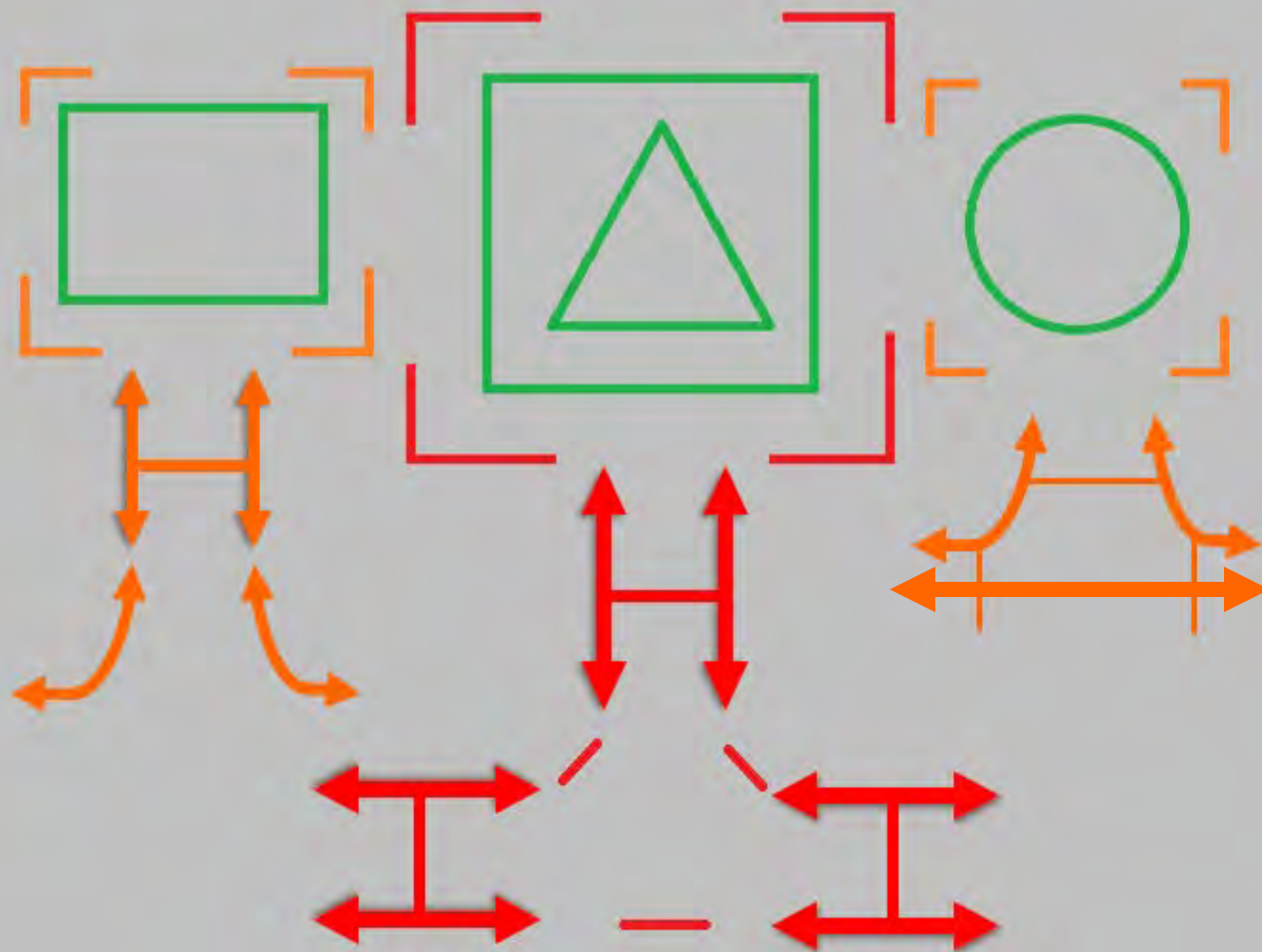
# Manholes and Ducts







# Marking Pedestals, Transformers & Poles





**Excavating on an Expired Dig Safe Ticket**





# Know your Locator

- It is important to know the contact information for the locators in your area.

- They can help answer any questions you have about their marks or methods.

- When applying for a Dig Safe ticket, ask for the locator to contact the excavator.



# Gas Pipeline Marker

## Does Show:

- ▶ The approximate location of the underground utility.
- ▶ The name of the operator and contact info.

## Does Not Show:

- ▶ The depth or number of utilities.
- ▶ The exact location of the underground utilities.

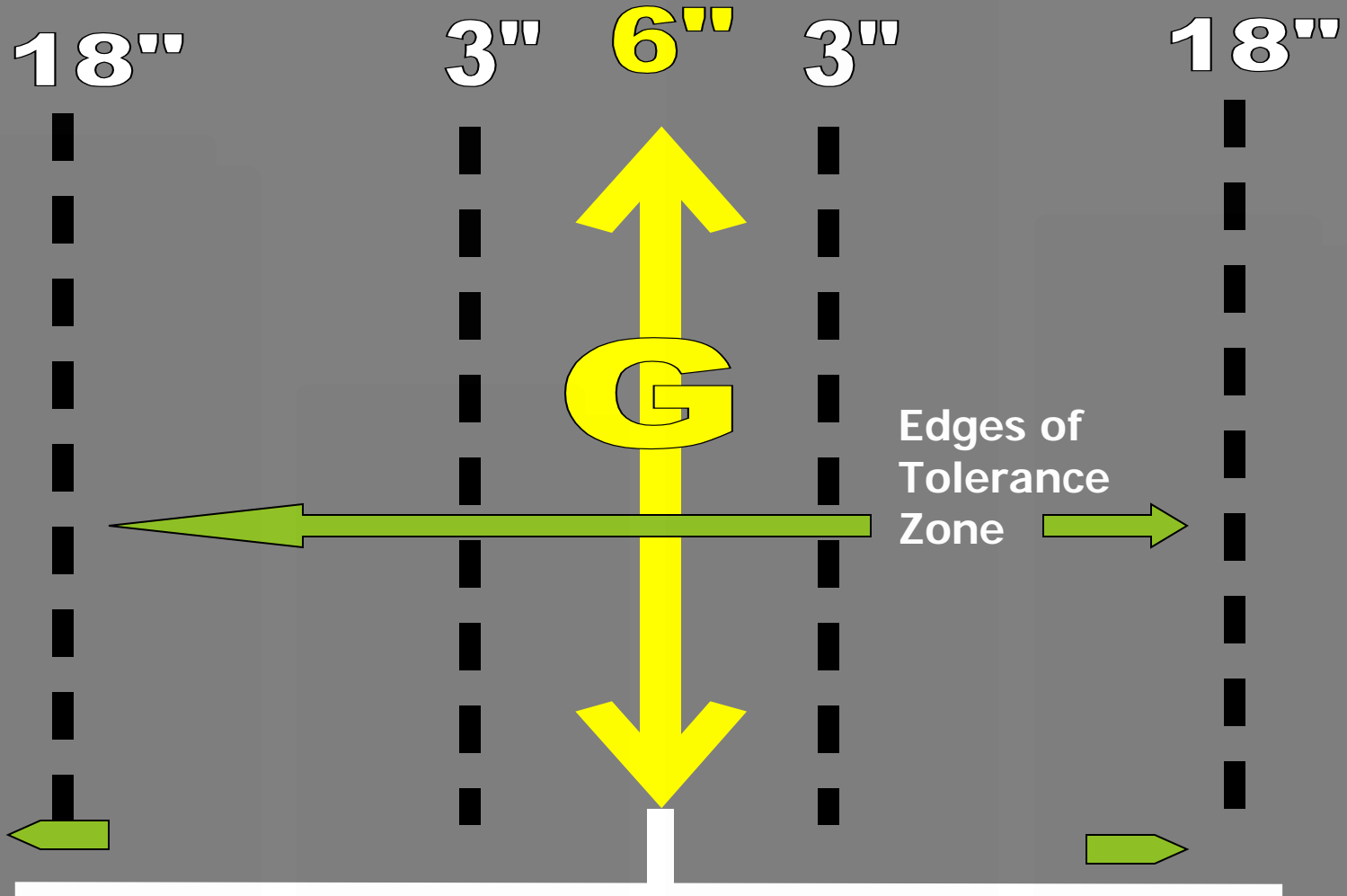


# Locating Facilities



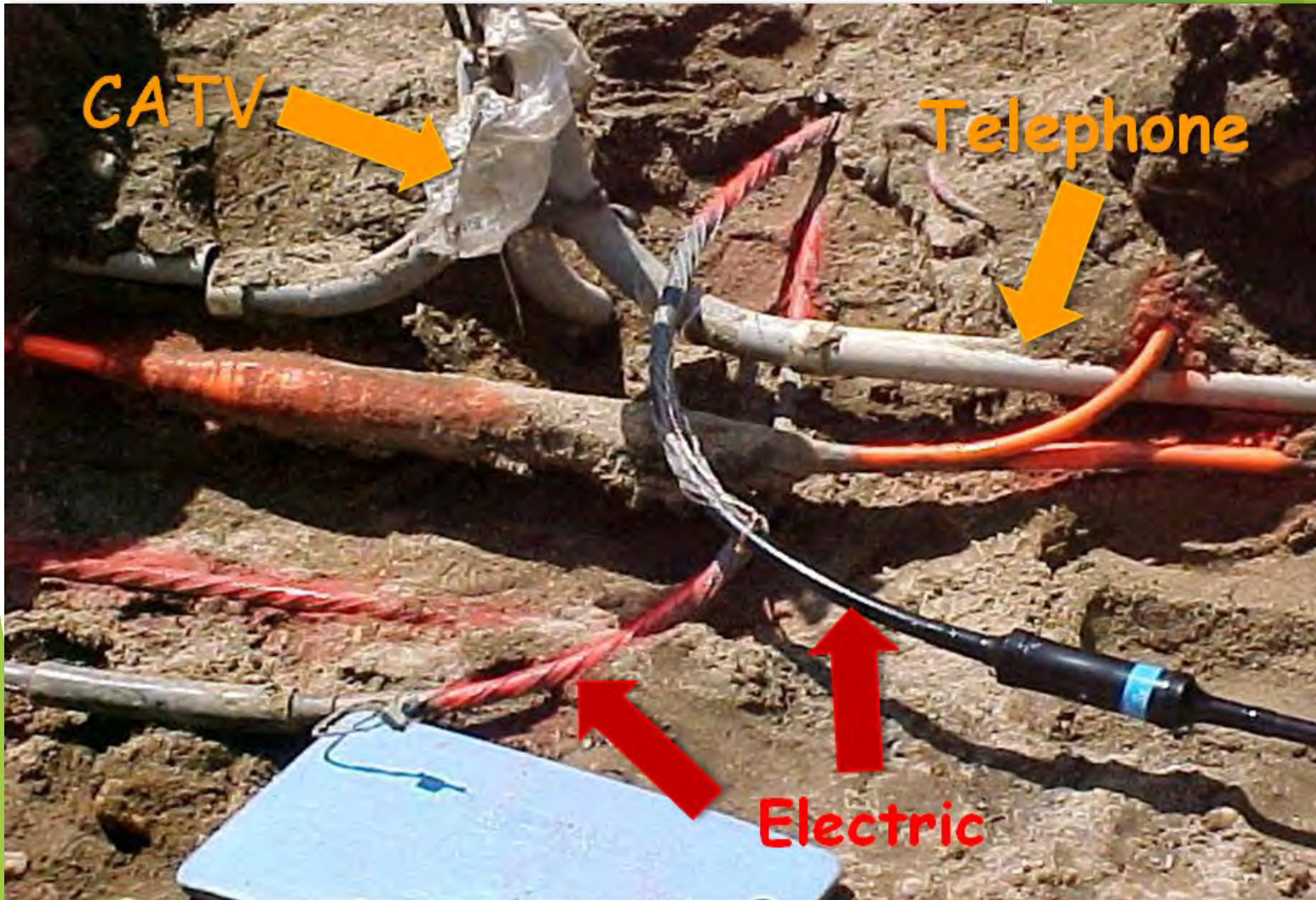
# TOLERANCE ZONE

## "Center line" Marks



Total width of Tolerance Zone is 42 inches

# Located Facilities







# Reasonable Care

**Do not take the last scoop!**

# Reason For Operator Violations

- Failure To Clearly Mark Location – **33.5%**
- Locator Error – **17%**
- Failure To Mark Within 72 Hours – **11%**
- Incorrect records – **8%**
- Failure To Mark Using Prescribed Methods
- Failure To Mark in Correct Color

The background of the slide features a photograph of firefighters in full gear, including helmets and oxygen tanks, positioned at a fire scene. The fire is bright orange and yellow, creating a dramatic and high-contrast background. The firefighters are seen from behind, looking towards the flames. The overall scene is one of active emergency response.

# Reason For Excavator Violations

- Damage to Marked Facilities – **27%**
- No Dig Safe Ticket – **22%**
- Failure To Renew Dig Safe Ticket – **20%**
- Excavating Outside of the tolerance zone – **18.5%**
- Subcontractor is Not On Ticket
- Failure To Maintain Marks – **3%**
- Failure To Wait 72 Hours
- Assuming Depth Of Facility

# Excavating Outside of the Pre-marked Area





# Hampton Beach Hit & Fire





## ► Gas Main Depth

The background image shows a cross-section of the ground where an underground facility has been damaged. A large, jagged hole has been made in the earth, revealing a network of pipes and electrical conduits. Some pipes are dark and appear to be made of metal or plastic, while others are lighter in color. A bundle of multi-colored wires (red, green, blue, yellow) is visible, protruding from the hole. The surrounding soil is brown and appears to be a mix of dirt and small rocks. The overall scene is one of a significant underground utility failure.

# If you hit an Underground Facility...

- ▶ Call 911 if there is a hit and gas is being released
- ▶ Evacuate nearby structures if necessary
- ▶ **DO NOT** attempt repairs
- ▶ Call the affected utility company
- ▶ Call 811 or 888 DIG-SAFE

**Never Bury a Damaged Underground Facility**





# If You Hit an Underground Facility...

- Take photos or video of the scene  
*(best before starting dig)*
- Dig Safe marks
  - ✓ Pictures of the actual damage
  - ✓ Other conditions that may factor in
  - ✓ Get witness(es) name(s)
- Take notes

• ~~File SNU report with Dept. of Energy,~~

Failure to report excavator damage is illegal per RSA 374:50, PUC 805.05(a)(6)

~~Division of Enforcement~~

# Reporting Damages

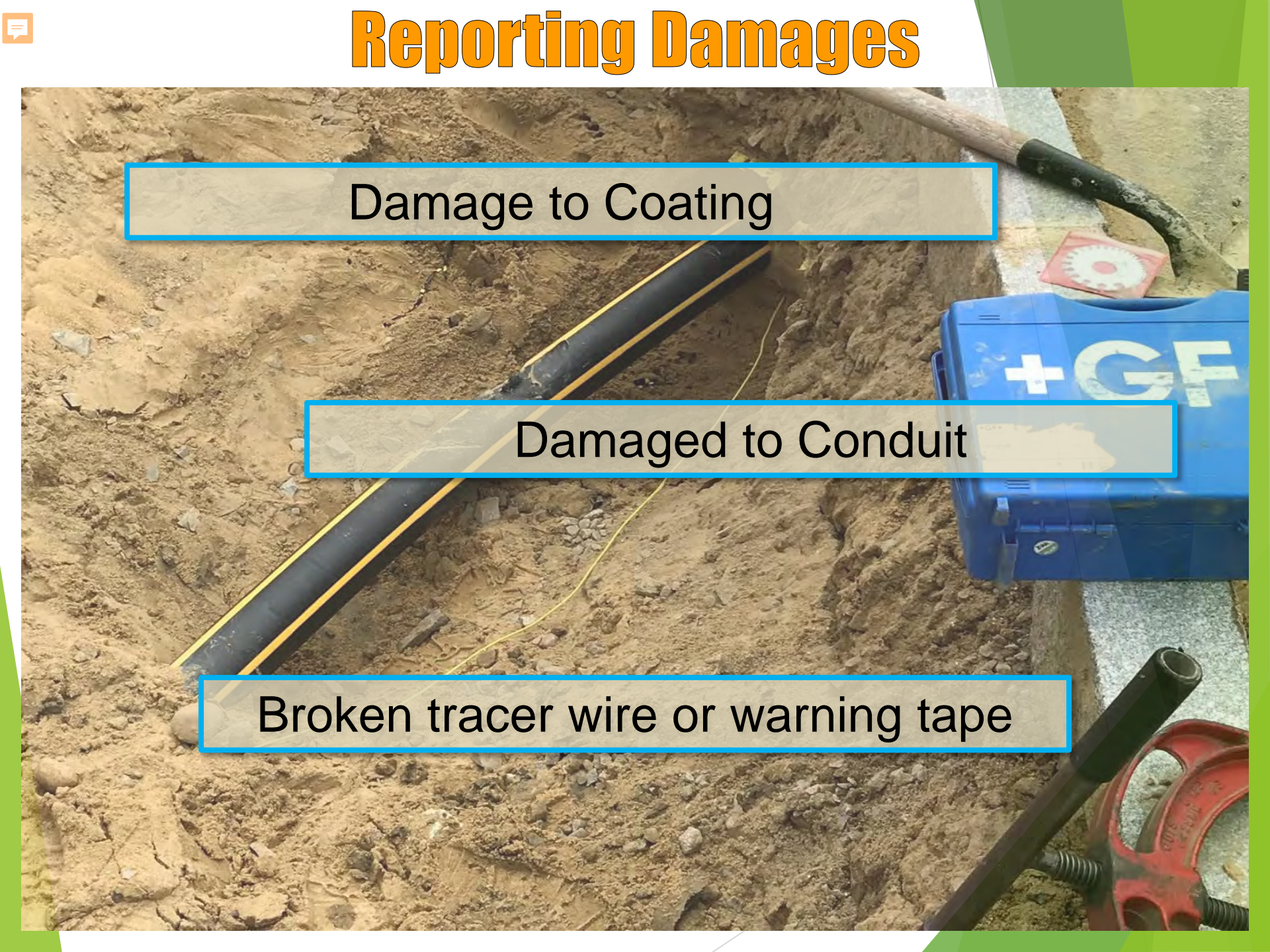


Damaged Lines

Unmarked Gas Facilities

Corrosion Control

# Reporting Damages



Damage to Coating

Damaged to Conduit

Broken tracer wire or warning tape



**Don't Take Unnecessary Chances when Digging**

# Thank you for Continuing to Dig Safely



Remember to  
Call 811. Not 911.

