

# OHIO UNIVERSAL MARKING STANDARDS

## APWA COLORS

The American Public Works Association recommended color code shall be used to mark the location of underground facilities, temporary survey markings, and site of intended excavation. When utility company representatives mark a location, they use colored flags and/or paint to identify the type of underground service:

ORC 3781.29(C) | *“A utility shall mark its underground facilities using the following color codes:...”*

|               |   |
|---------------|---|
| <b>RED</b>    | Electric Power Lines, Cables, Conduit and Lighting Cables |
| <b>YELLOW</b> | Gas, Oil, Steam, Petroleum, or Gaseous Materials          |
| <b>ORANGE</b> | Communication, Alarm or Signal Lines, Cables or Conduit   |
| <b>BLUE</b>   | Potable Water   |
| <b>PURPLE</b> | Reclaimed Water, Irrigation and Slurry Lines              |
| <b>GREEN</b>  | Sewers and Drain Lines                                    |
| <b>PINK</b>   | Temporary Survey Markings                                 |
| <b>WHITE</b>  | Proposed Excavating                                       |



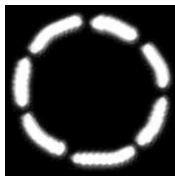
## WHITE LINING

While it is necessary to be specific about your area of excavation when contacting the Ohio Utilities Protection Service, excavators are required to pre-mark with white paint in order to show the facility owners/locators the specific area where excavation will take place. This will eliminate locating underground facilities that are not involved in the excavation area and reduce unnecessary paint on our streets, roads, and sidewalks.

3781.29(F)(14) | *“An excavator is not required to premark the approximate location of an excavation as provided in division (D) of this section in any of the following situations:*

- (1) The utility can determine the precise location, direction, size, and length of the proposed excavation site by referring to the notification provided by the protection service pursuant to sections 3781.27 and 3781.28 of the Revised Code.*
- (2) The excavator and the affected utility have had an on-site, preconstruction meeting for the purpose of premarking the excavation site.*
- (3) The excavation involves replacing a pole that is within five feet of the location of an existing pole.*
- (4) Premarking by the excavator would clearly interfere with pedestrian or vehicular traffic control.”*

For a single point excavation, such as installing poles, pedestals, or planting a tree, mark (with white paint) the area by using dashes to show the owners/locators the area of excavation.



## WHITE LINING *(Continued)*



For continuous excavation, such as trenching, boring, etc., mark the center line of excavation with dashes in white paint. Excavation width (in feet) shall be indicated on either side of the center line in legible figures.

*White flags or stakes may be used in place of white paint and, in some situations, may be more practical.*

---

## EXCESSIVE MARKS

Markers used to identify underground facilities should not be excessive or oversized.

---

## MARKERS APPROPRIATE FOR AREA

Underground facilities shall be marked using paint, flags, whiskers, chalk or other media as appropriate or a combination to identify the facility(s). Marks shall be placed at the beginning and end of the locate and at a minimum interval of two feet but not more than twenty-five feet throughout the locate as needed to clearly identify the route of the underground utility.

It is recommended that when flags are used at the excavation site by the facility owner/locator, the facility owner/operator's name is on the flag as well as a contact name and phone number. This contact will be able to assist the excavator if additional information is needed about the location of underground facilities.



# IDENTIFICATION ABBREVIATIONS

When marks are placed at the excavation site, the owner/operator of a utility line shall be indicated by a letter or letters utilizing the APWA color code. These letters shall be legible and placed at the beginning and end of the locate and at intervals throughout the locate as needed to clearly identify the owner/operator. This may also be achieved by the use of flags that indicate the owner/operator of the facility.

— — — — —  
4" STL CG

Visit **[www.OHIO811.org/markings](http://www.OHIO811.org/markings)**  
to view the facility owner identification codes list.

## CABLES

Underground utility lines of the same type in the same trench owned by the same company shall be marked individually.

- A. If a single underground facility is present, it shall be marked by placing a single mark over the approximate center of the facility. It is recommended that this mark be a minimum of 1" wide and 12" in length.

— — — — —  
OE OE

## CABLES *(Continued)*

- B.** If multiple underground facilities are present, they shall be marked by placing a single mark over the approximate center of each underground facility. It is recommended that this mark be a minimum of 1" wide and 12" in length.



Marks shall be placed at the beginning and the end of the locate and at a minimum interval of two feet but not more than fifty feet throughout the locate as needed to clearly identify the route of the underground utility.

---

## PIPELINES

- A.** Pipelines 2 inches and smaller (nominal size): The physical location of a pipeline shall be represented by a single mark.



- B.** Pipelines larger than 2 inches (nominal size): The physical location of a pipeline shall be represented by a single mark. The nominal size shall be noted.



*(Continued Next Page)*



# PIPELINES *(Continued)*

## For all pipelines:

1. The owner/operator shall be identified. Flags, as well as paint, shall be deemed acceptable as identifying the owner/operator.
2. When known, the material type of the pipeline shall be indicated using the "material type" abbreviation index.
3. When the facility is installed in casing the facility shall be marked as follows: "diameter and material type / casing diameter and material type". If the casing size or material is unknown it shall be indicated by "UNKN" and, the excavator, designer, or engineer should contact the facility owner. All parties involved shall work jointly to establish accurate information.

-----  
4" STL CG/12"DI      4" STL CG/UNKN

4. Marks shall be placed at the beginning and the end of the locate and at a minimum interval of two feet but not more than twenty-five feet (25') or anytime the facility changes direction, (maximum interval length does not apply to design tickets) throughout the locate as needed to clearly identify the owner/operator, pipeline location, material, and width.
5. All numbers identifying width shall be in inches.

---

## FACILITIES MARKED ACCORDING TO RECORD

Facilities not marked via electronic equipment should be indicated in this manner, in appropriate facility color code.



## CONDUIT/DUCT BANK

The term “conduit” shall be used for a single enclosure containing one or more facilities; the term “duct bank” shall be used for a structure containing two or more conduits.

A. For banks constructed with ducts sized 2 inches or less, the following information will be provided:

1. A single mark is used.
2. A diamond is placed within the mark.
3. The number of small-diameter ducts shall be indicated within the diamond symbol.



B. For duct banks containing ducts larger than 2 inches, the following information will be provided:

1. The duct bank boundary (the “width”) is identified with marks after locating the outermost ducts within the bank.
2. The number of facilities shall be placed within the diamond. This diamond shall be placed within the duct bank boundary marks.



(Continued Next Page)



## CONDUIT/DUCT BANK *(Continued)*

In situations where multiple conduits/ducts which are owned and/or operated by different companies are placed together in a bundle fashion, a conduit structure or duct bank marking symbol shall be used by the first operator marking the facility. Other operators owning facilities within the bundle shall verify the marks and add their owner/operator letter designation.



### C. For all conduits and duct banks:

1. The owner(s)/operator(s) shall be indicated using the facility owner identification code.
2. Marks shall be placed at the beginning and the end of the locate and at a minimum interval of two feet but not more than twenty-five feet (25') or anytime the facility changes direction, (maximum interval length does not apply to design tickets) throughout the locate as needed to clearly identify the owner/operator, the conduit/duct bank location, and the number of conduits. If known, indicate number of conduits in a duct bank.



## TERMINATION POINTS

Termination points, stub outs, and dead ends shall be marked as shown. Marking could also be accompanied by adding the letters "TP".



---

## CHANGE IN DIRECTION

When deviations in the direction of a facility are known to exist, the deviations shall be marked in a manner which clearly identifies the route of the facility.



## OFFSET MARKS

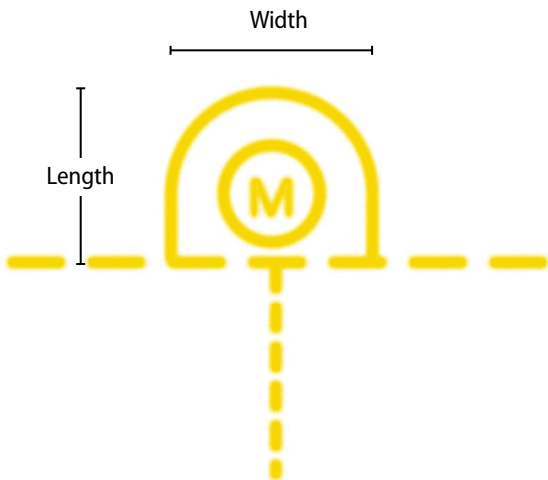
In areas prone to the frequent destruction of marks, offset marks may be used in conjunction with the marks placed at the actual location of a facility. They are intended to be used as a supplemental means of marking.

1. A line is placed in conjunction with an arrow and a measurement (stated in feet), which specifies the distance from the reference line to the actual location of the facility.
2. The arrow indicates the direction from the reference line to the actual location of the facility.
3. The arrow shall be oriented at 90 degrees to the reference line.
4. The distance to the actual location of the facility, from the reference line, shall be placed on one side of the arrow.
5. The locator shall provide all of the necessary information which adequately identifies the specific facility in accordance with the marking standards. This information shall be placed on the side of the arrow which is not utilized for the "distance" information.



## BACK TIED/LOOPED SERVICE

When known by records or documentation, the symbol shall be a ½ circle equaling 36" in width and 36" in length unless greater amount is identified.



## VALVE PITS/MANHOLES/VAULTS

When known, the perimeter of valve boxes, manholes, and other surface indicators shall be marked using the appropriate APWA color code. The structure should be named as such (vault, pit, manhole...) along with the structure owner's indicator. If the structure size is unknown it shall be indicated as "UNKN". If the size of the structure is not indicated, the excavator, designer, or engineer should contact the facility owner. All parties shall work jointly to establish accurate information.



---

## FACILITIES UNDER BODIES OF WATER

### **Identifying Facilities Located Under Bodies of Commercially Navigable Waterways...**

It is recommended that facility owner/operator shall comply with applicable state and federal standards.

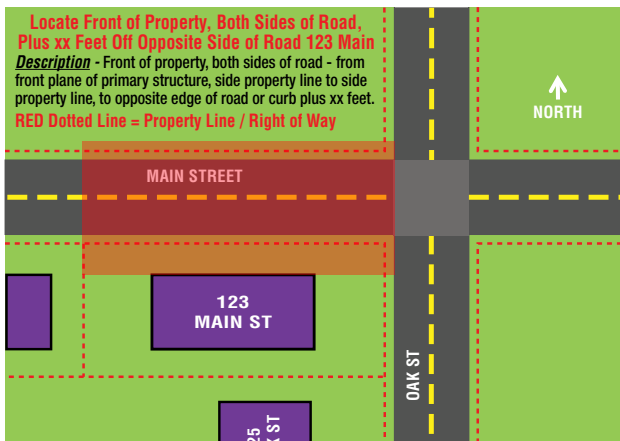
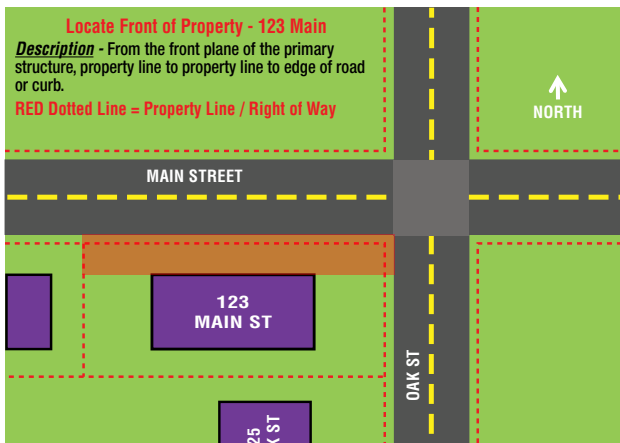
---

## CORRECTING MARKING ERRORS

Marking errors shall be corrected by the locator/operator and communicated to the excavator as soon as possible after the discovery of such errors. Black paint shall be used to remove, cover up or cancel erroneous markings. In the event of damage, marking errors shall be preserved until such marks are documented.



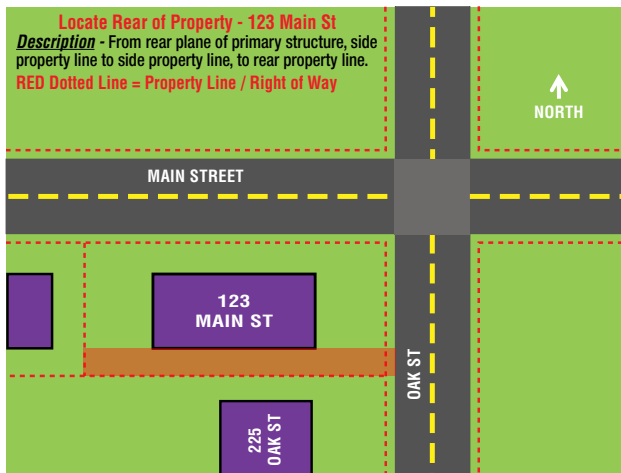
## WORK AREA DESCRIPTIONS



**Locate Rear of Property - 123 Main St**

**Description** - From rear plane of primary structure, side property line to side property line, to rear property line.

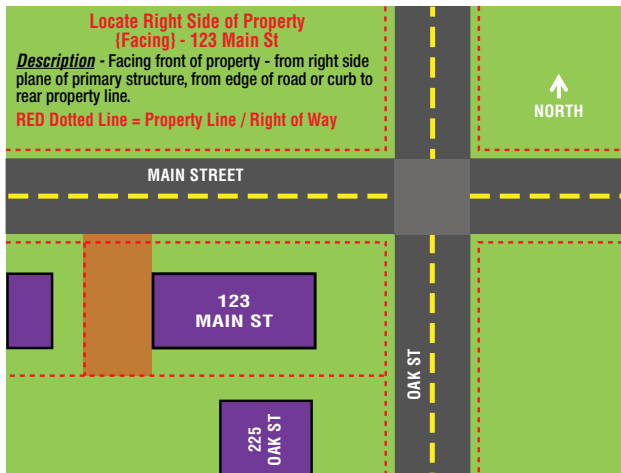
**RED Dotted Line = Property Line / Right of Way**

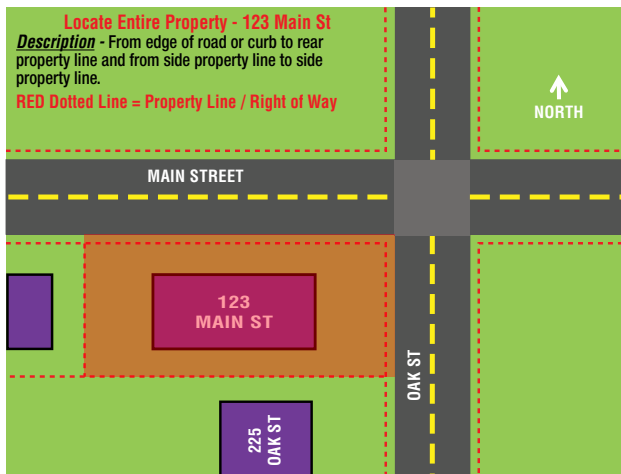
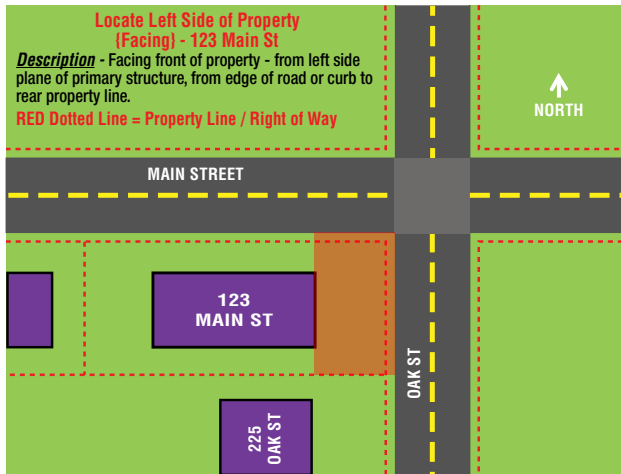


**Locate Right Side of Property (Facing) - 123 Main St**

**Description** - Facing front of property - from right side plane of primary structure, from edge of road or curb to rear property line.

**RED Dotted Line = Property Line / Right of Way**

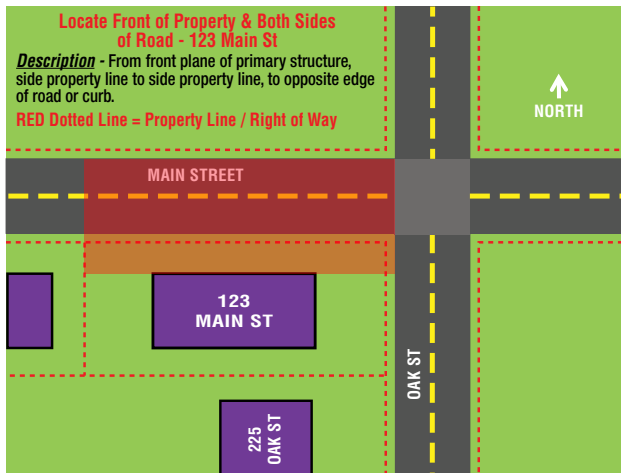




**Locate Front of Property & Both Sides of Road - 123 Main St**

**Description** - From front plane of primary structure, side property line to side property line, to opposite edge of road or curb.

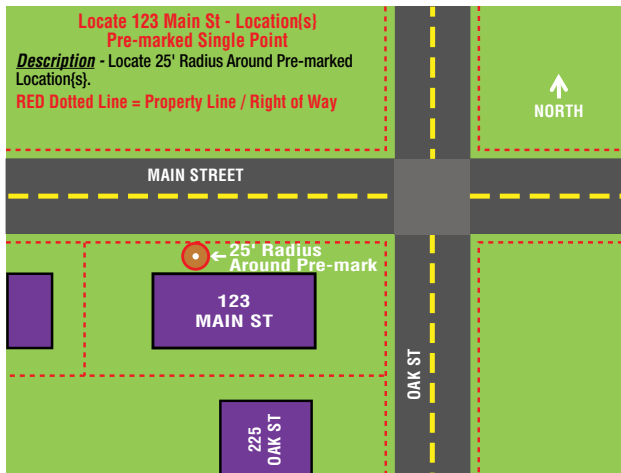
**RED Dotted Line = Property Line / Right of Way**



**Locate 123 Main St - Location(s) Pre-marked Single Point**

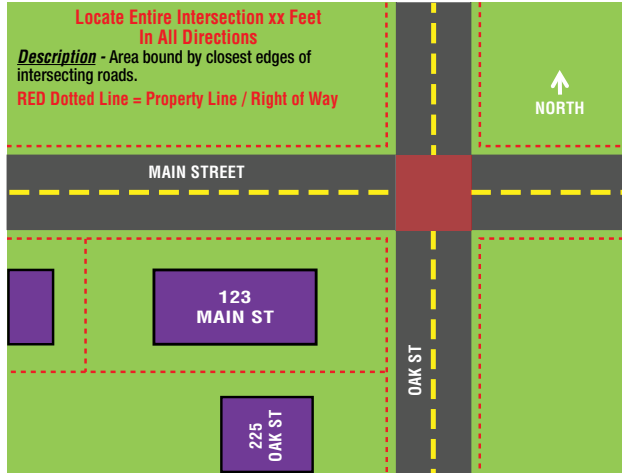
**Description** - Locate 25' Radius Around Pre-marked Location(s).

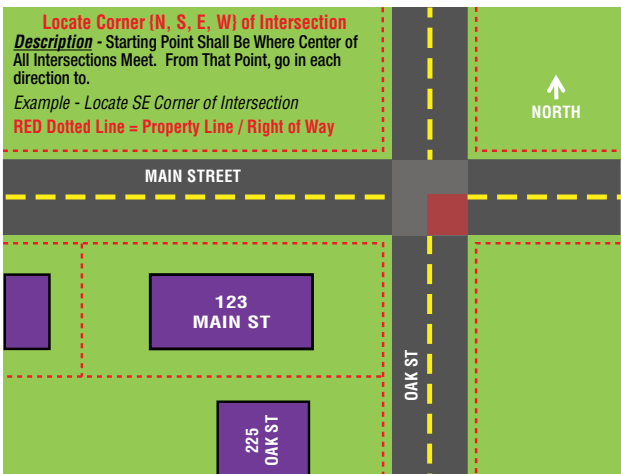
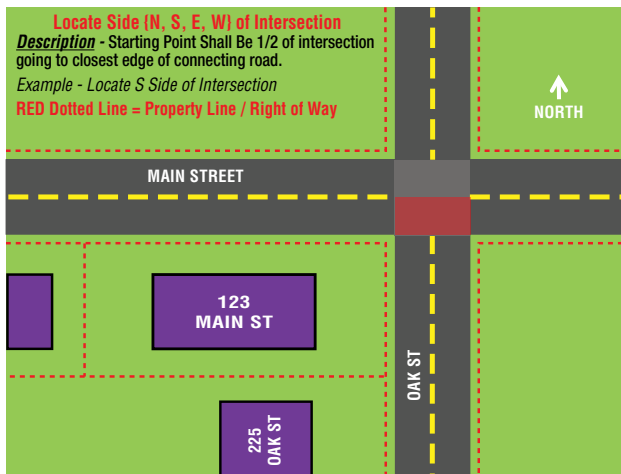
**RED Dotted Line = Property Line / Right of Way**





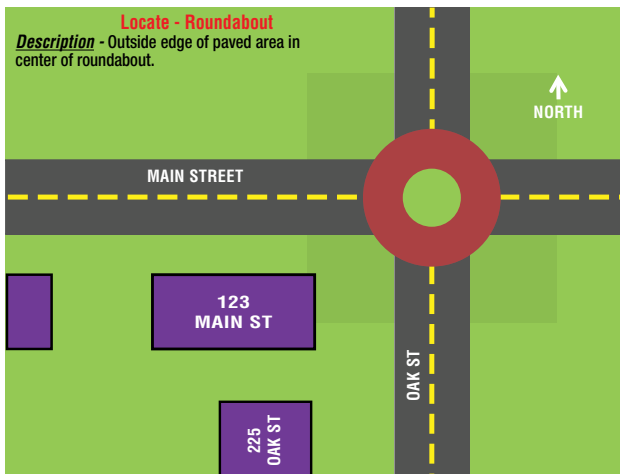






### Locate - Roundabout

**Description** - Outside edge of paved area in center of roundabout.



## DEFINITIONS

**Conduit** – A single enclosure containing one or more facilities.

**Duct Bank** – A structure containing 2 or more conduits.

**Owner** – Any person or entity who owns the means to convey services or materials.

**Operator** – Any person who furnishes or transports materials or services by means of a utility line.

**Pipelines** – Underground utility lines used for the transportation of hazardous liquid, steam, water, sewer, storm, and gaseous materials.

Visit **[www.OHIO811.org/markings](http://www.OHIO811.org/markings)**  
to view the definitions list.

## MATERIAL TYPE ABBREVIATIONS

|                   |                      |                  |                                     |
|-------------------|----------------------|------------------|-------------------------------------|
| <b>AC</b> .....   | Asbestos Cement      | <b>PI</b> .....  | Plastic Line Inserted<br>into Steel |
| <b>BRK</b> .....  | Brick Sewer          | <b>PL</b> .....  | Plastic                             |
| <b>CI</b> .....   | Cast Iron            | <b>PVC</b> ..... | Polyvinyl Chloride                  |
| <b>CPR</b> .....  | Copper               | <b>RCP</b> ..... | Reinforced Concrete Pipe            |
| <b>C/ST</b> ..... | Coated Steel         | <b>SCC</b> ..... | Steel Cylinder Concrete             |
| <b>DI</b> .....   | Ductile Iron         | <b>STL</b> ..... | Steel                               |
| <b>FO</b> .....   | Fiber Optic          | <b>TR</b> .....  | Transite                            |
| <b>FM</b> .....   | Forced Main          | <b>VCP</b> ..... | Vitrified Clay Pipe                 |
| <b>GI</b> .....   | Green Infrastructure |                  |                                     |

Visit **[www.OHIO811.org/markings](http://www.OHIO811.org/markings)**  
to view the material type abbreviations list.

## FOR ADDITIONAL INFORMATION ON LOCATING PRACTICES...

**This manual outlines the recommended facility marking standards for Ohio.** For additional information on locating practices, including the use of facility records, locator training recommendations, and safety guidelines, refer to Common Ground Alliance Best Practices at **[www.commongroundalliance.com](http://www.commongroundalliance.com)**.



**8-1-1** or **1-800-362-2764** [www.OHIO811.org](http://www.OHIO811.org)

## THINGS TO REMEMBER

Anyone who intends to dig in the state of Ohio can contact OHIO811 24 hours a day, 7 days a week, 365 days a year.



**1-800-362-2764**

[www.OHIO811.org](http://www.OHIO811.org)

12467 Mahoning Avenue  
North Jackson, Ohio 44451

Revision Date: August 2019





# COLOR CODES FOR LOCATING UTILITY LINES

**RED**

Electric Power Lines, Cables, Conduit and Lighting Cables

**YELLOW**

Gas, Oil, Steam, Petroleum, or Gaseous Materials

**ORANGE**

Communication, Alarm or Signal Lines, Cables or Conduit

**BLUE**

Potable Water

**PURPLE**

Reclaimed Water, Irrigation and Slurry Lines

**GREEN**

Sewers and Drain Lines

**PINK**

Temporary Survey Markings

**WHITE**

Proposed Excavating

***Tolerance Zone:** Width of Underground Facility Plus 18" on Each Side.*



**1-800-362-2764 or 8-1-1**  
**www.OHIO811.org**