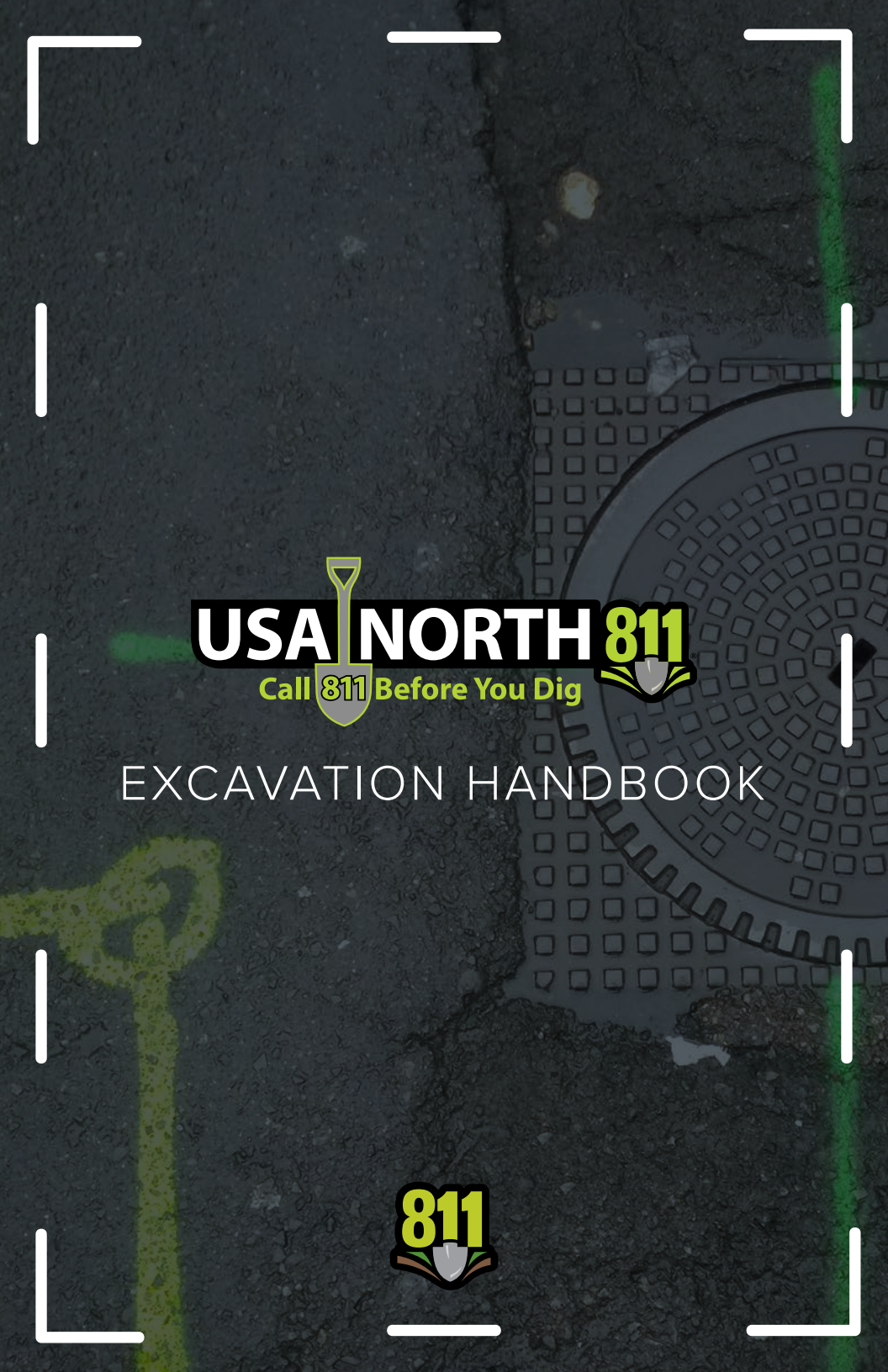
USA NORTH 811
Call 811 Before You Dig
EXCAVATION HANDBOOK
811

E-TICKET PROGRAM

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DAMAGE PREVENTION ACADEMY

BY USA NORTH 811

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USA NORTH 811 CENTER OVERVIEW

USA North 811 provides a free and effective damage prevention service that protects our citizens, communities, environment, essential public services, and underground facilities in Central and Northern California and Nevada.

Our objective is the continued overall safety and protection of those working in the field of excavation, the surrounding communities, and the underground lines themselves. Striking an underground line can result in expensive down time, repair costs, property damage, environmental contamination, personal injury or even fatalities. We accomplish this objective by serving as a central hub of communication between anyone planning to dig and our over 1,500 utility members (the owners/operators of underground facilities), so that those members can mark their lines before the digging begins. Each utility member notified of a planned excavation will respond by either:

1) Marking or staking the horizontal path of their facility,
2) Providing information about the location of their facility, or
3) Advising the excavator about the clearance of the facilities that they own, operate, and/or maintain (clear/no conflict).

Underground Service Alert of Northern California and Nevada (USA North 811)

- Available 24/7 online or by phone
- www.usanorth811.org (E-Ticket Program)
- www.811express.com (single address tickets)
- 811 / (800) 642-2444

Serving the following 49 counties in California:

Alameda, Alpine, Amador, Butte, Calaveras, Colusa, Contra Costa, Del Norte, El Dorado, Fresno, Glenn, Humboldt, Kern, Kings, Lake, Lassen, Madera, Marin, Mariposa, Mendocino, Merced, Modoc, Mono, Monterey, Napa, Nevada, Placer, Plumas, Sacramento, San Benito, San Francisco, San Joaquin, San Luis Obispo, San Mateo, Santa Clara, Santa Cruz, Shasta, Sierra, Siskiyou, Solano, Sonoma, Stanislaus, Sutter, Tehama, Trinity, Tulare, Tuolumne, Yolo, Yuba.

Underground Service Alert of Southern California (DigAlert)

6AM - 7PM, Monday - Friday (closed holidays)

direct.digalert.org

811 / (800) 422-4133

Serving the following 9 counties:

Inyo, Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego, Santa Barbara, Ventura.

GENERAL EXCAVATION INFORMATION

Be knowledgeable of all federal, state, county, city, or local requirements:

- Construction code
- Contractor license code
- Safety code
- Franchise code
- OSHA regulations
- Federal, state, county, city, or local ordinances
- Others that may apply

- Prior to starting an excavation, examine the excavation site for physical evidence (manholes, valve covers, water meters, fire hydrants, sewer cleanouts, storm drains, vaults, utility maintenance boxes, pole risers, etc.) that would indicate the existence of subsurface installations. Always excavate as cautiously and prudently as possible.

- USA North 811 accepts notifications for excavation work on public or private property, military bases, Indigenous Peoples reservations, and even waterways in California.

- Our members will locate, field mark, or stake the horizontal path, provide information about the location, or provide clearance for the subsurface installations that they own, operate, or maintain. Excavators should be aware that private or non-member utility lines may be present. NOTE: *CalTrans and operators of non-pressurized sewer lines, storm drains, and drain lines are exempt from being members.*

- Limit your excavation location description to a site that can be completed within a 28-calendar day period from the date you submit your ticket to USA North 811.

- Dividing larger excavation areas into smaller manageable sites helps our members respond to your excavation site more promptly.

- As work in one excavation site nears completion, contact 811 to get a ticket for your next excavation site and continue this process until your entire excavation area is complete.

- When working on private property, the excavator should determine what subsurface installations belong to the property owner (water, well, sewer, septic tanks, gas, propane lines, electrical, etc.) and what easement(s) may exist on the property, if any. In general, responsibility of underground facilities transfers to the property owner behind the curb, sidewalk, or clean out, or at the meter or point of demarcation. USA North 811 only notifies our utility members of your excavation work. For your safety, you should notify any non-member(s) directly.

- USA North 811 recommends that the excavator that created the notification remove all markings upon completion of the project. Utility markings serve a vital role in safety while the job is active, but can be viewed as unsightly to the community once the work has finished.

FIVE STEPS TO SAFE DIGGING

1. **Survey and Pre-mark:** Examine your proposed excavation site. Make a list of affected operators of underground installations (utility operators), their needs, and their requirements. Delineate the excavation site on paved surfaces with white spray chalk, water-based UV paint, or an equivalent non-permanent marking medium. Alternatively, white flags, stakes, whiskers, etc. can be used on unpaved surfaces. *NOTE: Temporary markings should be clearly visible, functional, and considerate to surface aesthetics and the local community. Please be advised of local ordinances regarding delineation.*

2. **Contact 811 Before You Dig:** Contact USA North 811 at least two (2) working days (not including the date of notification) and up to 14 calendar days before you dig. Only operators who are members of the notification center will be notified. Compare your list of affected operators determined in Step 1 with the list of operators notified by USA North 811. For your safety, contact any operator at your job site that is not a member.

3. **Wait the Required Time:** The legal minimum notice of two (2) working days gives the operator of the subsurface installation time to respond to your request and mark your site as necessary. Although USA North 811 will still issue a ticket if less than two (2) working days' notice is given, keep in mind that the utility member still has the minimum legal time to respond, and the excavator may be liable for any damages or incidents that occur if excavation begins before the legal start date and time.

4. **Confirm All Members Have Responded:** Excavators are required by law to wait until all operators of subsurface installations in the proposed dig area have provided a positive response before digging can begin, even if the start date and time shown on the ticket has passed. The positive response can include members locating and field marking their facilities, providing information about the location of their subsurface installation, or advising the excavator that the delineated dig site is clear of facilities owned by that facility operator.

5. **Respect the Marks & Dig with Care:** Preserve the marks for the duration of the job. If any facility markings are not reasonably visible, you must contact USA North 811 to submit a re-mark request for fresh markings. Excavation must cease in the vicinity until all affected facilities have been re-marked. Use hand tools only, to expose and determine the facility's exact location, when digging within 24 inches on either side of the outside diameter of the marked subsurface installation that is in conflict with your excavation. Notify the affected operator(s) of any contact, scrape, dent, nick or damage to their subsurface installation, as specified in 4216.4.

Note: *A ticket is active in California for 28 calendar days from the date of issuance. You must have an active ticket for the entire duration of your excavation.*

NO RESPONSE NOTIFICATION

If a member has failed to respond to your ticket, and both the legal two (2) working day notice and the start date and time on your ticket have passed (these may be the same), contact USA North 811 to submit a "No Response" notification with the name(s) of the member(s) failing to respond. This notification will be documented on the ticket. If after one hour there is still no response, you may contact 811 again and submit another No Response notification. You can continue this process every hour after your last notification.

Warning: There may be unidentified underground facilities at your job site. The excavator should review the job site for physical evidence of subsurface installations not located, e.g. manholes, valve covers, water meters, sewer cleanouts, vaults, storm drains, fire hydrant, utility maintenance boxes, pole risers, or other indicators such as pavement patches, etc.

RENEWAL NOTIFICATION

A ticket is active in California for 28 calendar days from the date of issuance. If work is continuing beyond the 28th day, and markings on the ground are still clearly visible, your ticket can be renewed online with the E-Ticket Program or by calling USA North 811 by the end of the 28th day.

RE-MARK NOTIFICATION

If the markings are no longer reasonably visible, contact USA North 811 to request re-marks from the corresponding utility member(s). Members have two (2) working days, not counting the date of the request, to re-mark their subsurface installations. Excavator's delineations must also be re-marked if no longer reasonably visible. All excavation in the area to be re-marked shall cease until the facility operator has responded and the two (2) working days have passed. You can request re-marks for all or only a portion of your site, but all work within the re-mark area must cease.

DAMAGE/EXPOSED NOTIFICATION

An excavator discovering or causing damage to a subsurface installation shall immediately notify the operator of said installation.

USA North 811 accepts damage/exposed notices from the excavator and will transmit said notice to our members in the area of the damage. We will also provide the excavator with the Emergency or Damage phone number for the member(s) whose subsurface installation was damaged.

If the damage results in the escape of any flammable, toxic, or corrosive gas or liquid, or endangers life, health, or property, the excavator responsible must immediately notify 911 and the subsurface installation owner/operator.

The excavator should take reasonable measures to protect themselves, those in immediate danger, the public, any property, and the environment until the subsurface installation operator or emergency responders have arrived and completed their assessment.

EMERGENCY NOTIFICATION

The regional center accepts emergency notifications. California Government Code Section 4216 (f) defines an emergency as a sudden, 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.

ELECTRONIC POSITIVE RESPONSE

California Government Code 4216 states that on January 1st, 2021, all California utility members of USA North 811 will be required to use the Electronic Positive Response system when responding to excavator tickets. Electronic Positive Response is a system that encourages communication from member utility companies to USA North 811; notifying us of the status of the ticket or the method they chose to respond to a ticket. Currently, an excavator must rely on receiving a response from each member on the ticket by either: marking the site, providing the excavator with information about the location of facilities in the area (maps, drawings, etc.), or notifying the excavator that the site is clear of their facilities. Members typically communicate this through email or a phone call, or by simply marking the site (without notifying the excavator directly). Electronic Positive Response allows excavators to visit www.USANorth811.org to see every response by the members on their ticket in one location.

For 2020, Electronic Positive Response will still be voluntary for members in California and Nevada. We encourage all utility member companies to use the Electronic Positive Response system in both states, if for nothing more than to get used to the system before it becomes mandatory in your state.

Electronic Positive Response Codes & Descriptions

Response Code	Description
000	Reserved for system use only
001	Clear - No Conflict
002	Clear - No Conflict But Privately Owned Utility On Property - Contact Private Utility Owner For Locate
003	Existing Markings Adequate
004	No Markings Requested
010	Locate Area Marked
011	Locate Area Marked But Abandoned Facilities May Be In The Area
012	Locate Area Marked Up To Private Owned Utility - Contact Private Utility Owner For Locate
013	Locate Area Marked Up To Private Property
014	Partially Marked - More Time is Needed
015	Provided Facility Location Information To Excavator (4216.3(a)(1)(A)(ii))
020	Bad Address/Incorrect Street/Location Info - Resend Ticket Requested
021	No Access To Locate Area - Resend Ticket Requested
022	No Delineation - Resend Ticket Requested
023	Delineated Area Does Not Match Location Request - Resend Ticket Requested

Response Code	Description
030	Contact Facility Owner For Further Info
031	Requires Stand By At Time Of Excavation - Contact Facility Owner
032	Visible Or Exposed Facility - Contact Facility Owner If Crossing
033	High Priority Line in Area - On Site Meeting Required
034	Field Meet Required - Contact Facility Owner to Schedule
035	Traffic Control Required to Mark Facilities
040	Excavator Completed Work Prior To Due Date
041	Excavator No Show For Meet
042	Excavator Canceled Request
050	Negotiated Marking Schedule
051	Mutually Agreed To a Later Start Date and Time (4216.3(a)(1)(a))
052	Unable To Located Using Standard Locating Techniques
053	Scheduled Meet With Excavator At Requested Date and Time Confirmed
080	Extraordinary Circumstances Exist - No Locate Due To Weather/Emergency/Safety Conditions

Electronic Positive Response Code Definitions and Examples

001: Clear - No conflict

Definition: The members lines are not in the area to be excavated. This does NOT mean that the member doesn't have any line in the area. A member may have lines nearby but based on the delineation and the location on the ticket, they are clear for that area. If, for any reason the excavation area or type of work changes, the excavator MUST contact the notification center and get a new ticket issued for the changes.

When to use: ONLY when there are no underground facilities within the area of delineation and/or the location on the ticket.

002: Clear - No conflict but privately owned utility on property - Contact private utility owner for locate

Definition: The members lines are not in the area to be excavated but the member knows there are privately owned facilities on the property. This does NOT mean that the member doesn't have any line in the area. A member may have lines nearby but based on the delineation and the location on the ticket, they are clear for that area. If, for any reason, the excavation area or type of work changes, the excavator MUST contact the notification center and get a new ticket issued for the changes.

When to use: ONLY when there are no underground facilities within the area of delineation and/or the location on the ticket and there is knowledge of private lines in the area.

003: Existing markings adequate

Definition: The markings on site are reasonably visible and marked to the extent of the delineation and/or ticket location. If, for some reason the excavation area or type of work changes, the excavator MUST contact the notification center and get a new ticket issued for the changes.

When to use: When the existing markings on site are complete and accurate.

004: No markings requested

Definition: The excavator is asking certain members or all members not to mark. The most common use the centers see for this is on emergency work where the job was completed but the excavator needs a ticket number to make the permit valid.

When to use: ONLY when the excavator is not asking for any marks.

010: Locate area marked

Definition: The area of delineation and/or the ticket location area has been marked completely and accurately.

When to use: After the entire area of delineation and/or the ticket location area has been marked completely and accurately.

011: Locate area marked but abandoned facilities may be in the area

Definition: Active lines are marked, and the member has marked with an A in a circle to indicate the presence of known abandoned lines. The marking of the A in a circle is to make the excavator aware that an abandoned line is in the area and is not subject to accurate marking.

When to use: If BOTH active and known abandoned lines are marked.

012: Locate area marked up to private owned utility - Contact private utility owner for locate

Definition: The area of delineation and/or the ticket location area has been marked up to the ending point of what the member owns and maintains. Lines downstream could be owned by the property owner or others and the excavator would need to get private locating done.

When to use: The member does NOT own or maintain the lines downstream

013: Locate area marked up to private property

Definition: The area of delineation and/or the ticket location area has been marked up to the ending point of what the member owns and maintains. Member does not have easements on the private property. Lines downstream could be owned by the property owner or others and the excavator would need to get private locating done.

When to use: ONLY when the member does NOT mark easements on private property.

014: Partially marked - more time is needed

Definition: The area of delineation and/or the ticket location area has been partially marked. Member needs more time to complete marking.

When to use: Member has been called away or needs more information to complete markings. NOTE: this code does NOT close the ticket.

015: Provided facility information to excavator (California Government Code 4216.3(a)(1)(A)(ii))

Definition: The member to the extent and degree of accuracy that the information is available, provides information to the

excavator where the active or inactive lines are located.

When to use: Member does NOT locate and field mark their active or inactive lines but otherwise provides information to the excavator of where the lines are located.

020: Bad address/incorrect street/location info - Resend ticket requested

Definition: Member cannot find the location on the ticket. Excavator will need to contact center to correct location. Additional time may be needed to complete marking. If mapping changes a new ticket will need to be issued.

When to use: Member cannot reach excavator by communication methods available on ticket to request the excavator to clarify or correct the location.

021: No access to locate area - Resend ticket requested

Definition: The member cannot access the area listed on the ticket due to a locked gate, fence or other hindrance (ex - dog in yard). Excavator please provide access information or time when access to location will be available. Additional time may be needed to complete marking.

When to use: Member cannot reach excavator by communication methods available on ticket and the area is inaccessible.

022: No delineation (California Government Code 4216.2(a)) - Resend ticket requested

Definition: The area is not delineated as required by 4216.2(a). Member has chosen not to locate and field mark until the area to be excavated is delineated. Excavator needs to delineate the area where the excavation will take place and submit an amendment through the center when the area is delineated. Additional time may be needed to complete marking.

When to use: The excavator has not delineated the area to be excavated.

023: Delineated area does not match location requested - Resend ticket requested

Definition: There is a discrepancy between what is delineated on site and the description on the ticket. This can cause confusion for the member locating the actual area the excavator will be working. Excavator needs to clarify the location by sending an amendment on the ticket. If mapping changes a new ticket will need to be issued. Additional time may be needed to complete marking.

When to use: The member cannot determine where the actual excavation will be due to inconsistencies between site delineations and ticket location information.

030: Contact facility owner for further info

Definition: The member needs the excavator to contact them to explain markings and/or processes needed to safe guard their lines while excavating.

When to use: The member has marked the area BUT needs to communicate more information to the excavator.

031: Requires stand-by at time of excavation - Contact facility owner

Definition: The member requires a representative to be on site while the excavation is taking place. Excavator required to contact the member to set up date and time for the stand-by.

When to use: The member has marked BUT needs to also be on site during the excavation.

032: Visible or exposed facility - Contact facility owner if crossing

Definition: The line is visible/exposed and if the excavation will be crossing the visible/exposed line, the excavator needs to contact the member.

When to use: The member has marked BUT a line is exposed and wants the excavator to contact them if the excavation will be crossing the visible line.

033: High priority line in area - On Site Meeting Required (California Government Code 4216.2(e))

Definition: The member has a high priority line as defined in 4216(j) and is required to meet with the excavator and the member will contact excavator to set up an on site meeting.

When to use: Anytime a high priority line meeting is required.

034: Field meet required - Contact facility owner to schedule

Definition: The member wants to meet with the excavator prior to excavation commencing. Excavator needs to contact member to set up a meeting.

When to use: The member has NOT marked the lines and requires a meeting before excavation begins.

035: Traffic control required to mark facilities

Definition: The area to be excavated needs a traffic control plan. Excavator needs to contact the member to discuss plans for safety of the locator.

When to use: The member cannot mark before a traffic control plan is set up with the excavator.

040: Excavator completed work prior to due date

Definition: The job is completed before the member has marked their line.

When to use: The member did not mark as job was completed before the start date and time on the ticket.

041: Excavator no-show for meet

Definition: The excavator and member agreed to a meet date and time and the excavator did not show.

When to use: After a meeting has been scheduled and the excavator did not meet with the member at the specified date and time.

042: Excavator canceled request

Definition: The excavator cancels the ticket before the member has responded

When to use: ONLY to clear a ticket as having a response if a CNCL ticket is sent before the member has responded.

050: Negotiated marking schedule (California Government Code 4216.3(a)(1)(A))

Definition: The member and excavator have mutually agreed to the sequence and time frame in which to locate and field mark

When to use: The member and excavator have discussed and agreed to a marking schedule.

051: Mutually agreed to a later start date and time (California Government Code 4216.3(a)(1)(A))

Definition: The member and excavator have mutually agreed to a later start date and time for the excavation to begin.

When to use: The member and excavator have discussed and agreed to a new start date and time.

052: Unable to locate using standard locating techniques

Definition: The member cannot find the line using standard locating techniques and will need an alternate method for locating the line which may include excavation. Additional time will be needed to complete marking.

When to use: ONLY if line cannot be found. If member will be excavating to locate the line, the member will need to create their own ticket.

053: Scheduled meet with excavator at requested date and time

Definition: The excavator has asked for a joint meet and mark on the ticket. This code is designed to communicate to the excavator that your company will be present during the meet at the scheduled date and time and to avoid an automatic late notice since responses must be submitted prior to the legal date and time.

When to use: ONLY when you are confirming to be present at the scheduled meet date and time.

080: Extraordinary circumstances exist - No locate due to weather / emergency / safety conditions

Definition: There are circumstances that make it impossible to locate the ticket prior to the legal date and time.

When to use: ONLY when there are weather, emergency or

safety conditions that prevent marking from taking place.

999: Member did not respond by the required time (System use only)

Definition: The member did not respond to the electronic positive response system prior to the legal date and time. Keep in mind that the use of electronic positive response is not mandatory, and some members may choose not to use the system.

When to use: Not available for use by the member. This is a system generated response.

ONLINE OPTIONS FOR SUBMITTING TICKETS

E-Ticket Program

The E-Ticket Program gives users the ability to create, amend, and manage their tickets online 24/7, without having to call the center and wait in line. With the same system used by USA North 811 employees, users can create tickets for any location type, submit renewals or re-marks, and much more. Users also have the support of our dedicated Web Operations team, who are available to answer any questions. The software is free to use; to get started, please visit our website at www.USANorth811.org.

811Express.com

A quick and easy platform for creating your **single address locations** in 3 minutes or less. No training required and accessible from multiple mobile devices.

Web Ticket Management System for Members

WebTMS is an online platform integrated into the ticket submission software that enables utility members to easily manage and respond to incoming tickets. It allows members to automatically distribute and assign tickets within their organization. Contact Member Services today to learn more about the numerous features of WebTMS and what it can do for you.

CONTACTS AT USA NORTH 811

Call Center: (800) 642-2444

(Direct 800 number if calling from outside of our territory)

Web Operations: (925) 222-6518

(E-Ticket Platform/811Express.com)

Member Services: (925) 222-6501

(Service Area Registration, Contact Info Updates, Membership Questions)

Marketing & Education: (925) 222-6514

(Promo items/education requests)

CGA Best Practices - Appendix B

Uniform Color Code

& Marking Guidelines

https://commongroundalliance.com/best-practices-guide

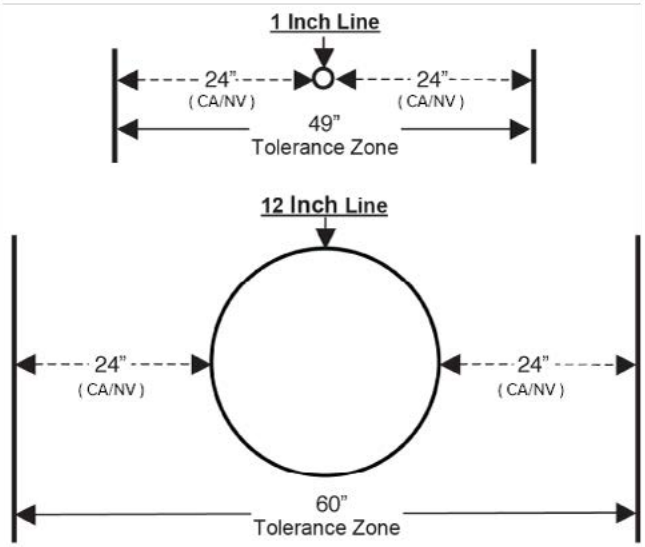
Uniform Color Code

The following APWA uniform color code (ANSI Z535.1) shall be adopted as the uniform color code for marking excavation sites and underground subsurface installations in conflict with an excavation. This recommendation is not intended to preempt any existing state requirement that specifies other colors.

White	Proposed Excavation
Pink	Temporary Survey Markings
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

Tolerance Zone

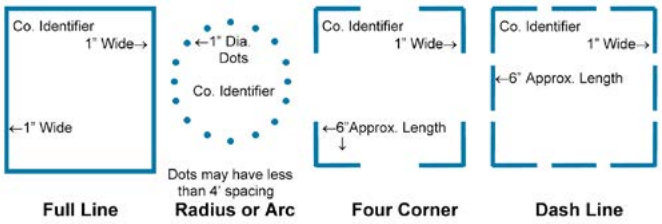
The following examples are of tolerance zones for a 1 in. and 12 in. line:



Guidelines for Excavation Delineation

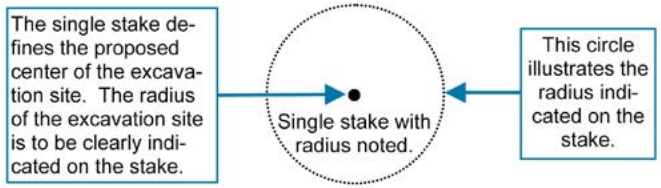
The following marking illustrations are examples of how excavators may choose to mark their area of proposed excavation. The use of white marking products (e.g., paint, flags, stakes, whiskers, or a combination of these) may be used to identify the excavation site.

Single Point Excavations Markings



Delineate in white the proposed area of excavation using a continuous line, dots marking the radius or arcs, dashes marking the four corners of the project, or dashes outlining the excavation project. Limit the size of each dash to approximately 6 in. to 12 in. long and 1 in. wide with interval spacing approximately 4 ft to 50 ft apart. Reduce the separation of excavation marks to a length that can reasonably be seen by the operator's locators when the terrain at an excavation site warrants. Dots of approximately 1 in. diameter typically are used to define arcs or radii and may be placed at closer intervals in lieu of dashes.

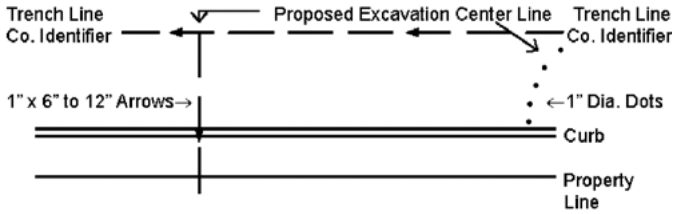
Single Stake Marking Center Point of Excavation Site



When an excavation site is contained within a 50 ft maximum radius or less, it can be delineated with a single stake that is positioned at the proposed center of the excavation. If the excavator chooses this type of delineation, they must convey that they have delineated the excavation site with a single stake at the center of the excavation and include the radius of the site in the notification to the one call center. This single stake is white in color and displays the excavator's company identifier (name, abbreviations, or initials) and the radius of the excavation site in black letters on the stake or with a notice attached to the stake.

Trenching, Boring, or

Other Continuous-Type Excavations



Continuous Excavation Marking

Mark in white the proposed centerline of planned excavation using 6 in. to 12 in. × 1 in. arrows approximately 4 ft to 50 ft apart to show direction of excavation. Reduce the separation of excavation marks to a length that can reasonably be seen by the operator's locators when the terrain at an excavation site warrants. Mark lateral excavations with occasional arrows showing excavation direction from centerline with marks at curb or property line if crossed. Dots may be used for curves and closer interval marking.

Stake, Flag, or Whisker Excavation Markers

Delineate the proposed area of excavation using stakes, flags, or whiskers instead of spray paint to mark radius or arcs; the four corners of the project; or when outlining the excavation project. Limit the interval spacing to approximately 4 ft to 50 ft. Reduce the separation of excavation marks to a length that can reasonably be seen by the operator's locators when the terrain at an excavation site warrants. Stakes, flags, or whiskers provided to illustrate arcs or radii may be placed at closer intervals to define the arc or radius. Stakes, flags, or whiskers are white in color and display the excavator's company identifier (name, abbreviations, or initials).

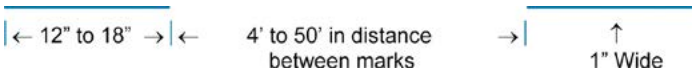
Guidelines for Operator Facility Field Delineation

Operator markings of subsurface installations include the following:

- The appropriate color for their facility type
- Their company identifier (name, initials, or abbreviation) when other companies are using the same color
- The total number of subsurface installations and the width of each facility
- A description of the facility (HP, FO, STL, etc.).

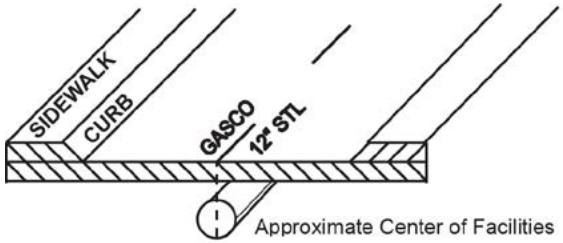
Use paint, flags, stakes, whiskers, or a combination to identify the operator's facility(s) at or near an excavation site.

1. Marks in the appropriate color are approximately 12 in. to 18 in. long and 1 in. wide, spaced approximately 4 ft to 50 ft apart. When marking subsurface installations, the operator considers the type of facility being located, the terrain of the land, the type of excavation being done, and the method required to adequately mark the subsurface installations for the excavator.

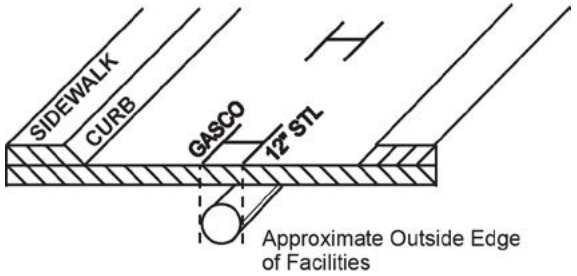


2. The following marking examples illustrate how an operator may choose to mark their subsurface installations:

   a. **Single Facility Marking:** Used to mark a single facility. This can be done in one of two ways—1) placing the marks over the approximate center of the facility:



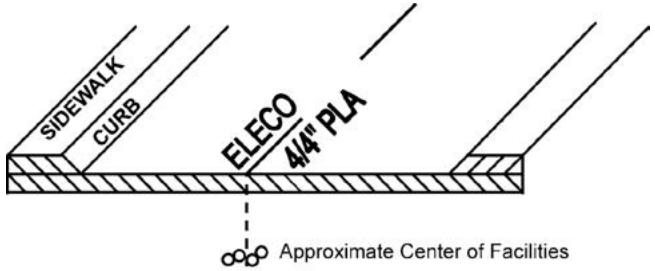
or 2) placing the marks over the approximate outside edges of the facility with a line connecting the two horizontal lines (in the form of an H) to indicate there is only one facility:



These examples indicate an operator's 12 in. facility. When a facility can be located or toned separately from other subsurface installations of the same type, it is marked as a single facility.

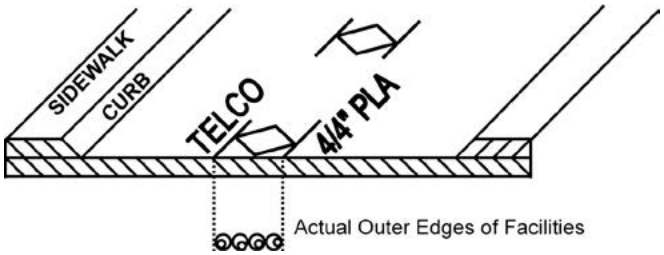
   b. **Multiple Facility Marking:** Used to mark multiple subsurface installations of the same type (e.g., electric), where the separation does not allow for a separate tone for each facility, but the number and width of the subsurface installations is known. Marks are placed over the approximate center of the subsurface installations and indicate the number and width of the subsurface installations.

Example: Four plastic subsurface installations that are 4 in. in diameter (4/4" PLA)



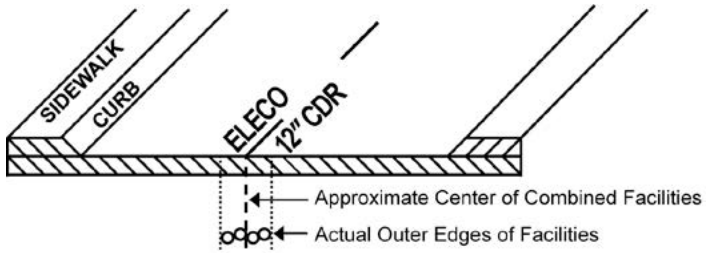
c. Conduit Marking: Used for any locatable facility being carried inside conduits or ducts. The marks indicating the outer extremities denote the actual located edges of the subsurface installations being represented.

Example: four plastic conduits that are 4 in. in diameter (4/4» PLA), and the marks are 16 in. apart, indicating the actual left and right edges of the subsurface installations



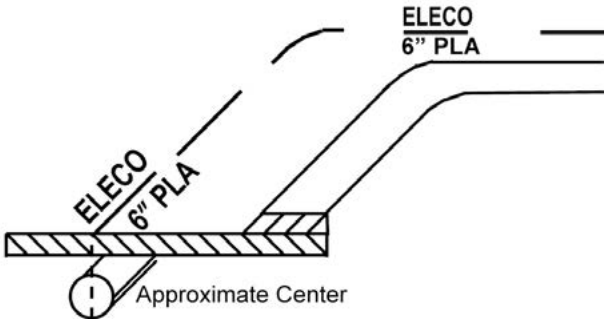
d. Corridor Marking: Used to mark multiple subsurface installations of the same type (e.g., electric), bundled or intertwined in the same trench, where the total number of subsurface installations is not readily known (operator has no record on file for the number of subsurface installations). Marks are placed over the approximate center of the subsurface installations and indicate the width of the corridor. The width of the corridor is the distance between the actual located outside edges of the combined subsurface installations.

Example: a 12 in. corridor (12” CDR)

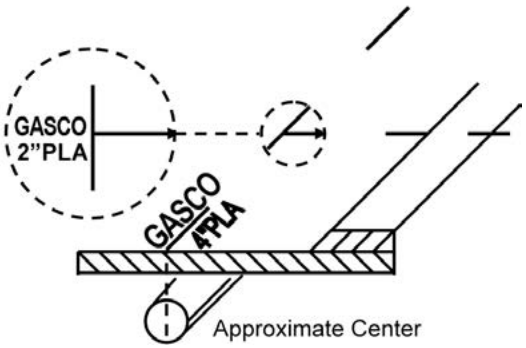


3. Changes in direction and lateral connections are clearly indicated at the point where the change in direction or connection occurs, with an arrow indicating the path of the facility. A radius is indicated with marks describing the arc. When providing offset markings (paint or stakes), show the direction of the facility and distance to the facility from the markings.

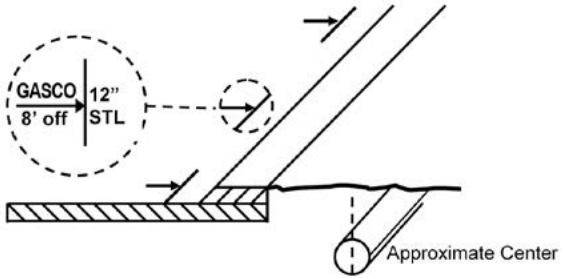
Example: radius



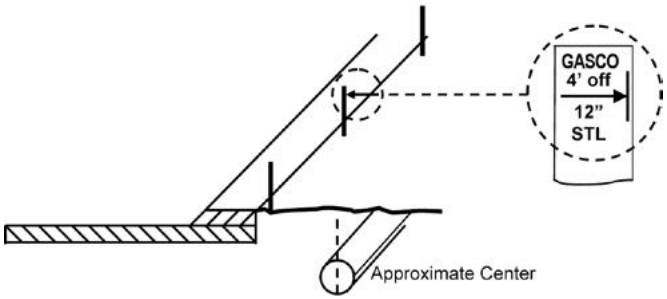
Example: lateral connection



Example: painted offset (off)



Example: staked offset (off)



4. An operator's identifier (name, abbreviation, or initials) is placed at the beginning and at the end of the proposed work. In addition, subsequent operators using the same color mark their company identifier at all points where their facility crosses another operator's facility using the same color. Reduce the separation of excavation marks to a length that can reasonably be seen by the operator's locators when the terrain at an excavation site warrants.

Examples:

CITYCO	ELECO	TELCO

Information regarding the size and composition of the facility is marked at an appropriate frequency.

Examples: the number of ducts in a multi-duct structure, width of a pipeline, and whether it is steel, plastic, cable, etc.

TELCO	GASCO	WATERCO
9/4" CAB	4" PLA	12" STL

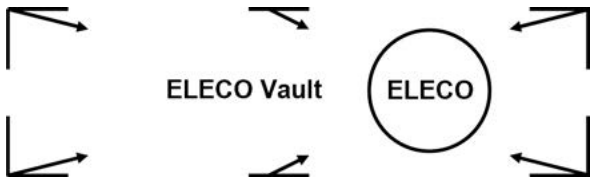
5. Subsurface installations installed in a casing are identified as such.

Examples: 6 in. plastic in 12 in. steel and fiber optic in 4 in. steel

GASCO	TELCO	
6" PLA/12" STL	FO (4" STL)	

Structures such as vaults, inlets, and lift stations that are physically larger than obvious surface indications are marked so as to define the parameters of the structure.

Example:



6. Termination points or dead ends are indicated as such.

Example:

7. When there is "No Conflict" with the excavation, complete one or more of the following:

   - Operators of a single type of facility (e.g., TELCO) mark the area "NO" followed by the appropriate company identifier in the matching APWA color code for that facility.

Example: NO TELCO

- Operators of multiple subsurface installations mark the area "NO" followed by the appropriate company identifier in the matching APWA color code for that facility with a slash and the abbreviation for the type of facility for which there is "No Conflict."

Example: NO GASCO/G/D illustrates that GASCO has no gas distribution subsurface installations at this excavation site. The following abbreviations are used when appropriate: /G/D (gas distribution); /G/T (gas transmission); /E/D (electric distribution); /E/T (electric transmission).

- Place a clear plastic (translucent) flag that states "No Conflict" in lettering matching the APWA color code of the facility that is not in conflict. Include on the flag the operator's identifier, phone number, a place to write the locate ticket number, and date. Operators of multiple subsurface installations indicate on the flag which subsurface installations are in "No Conflict" with the excavation (see the previous example).

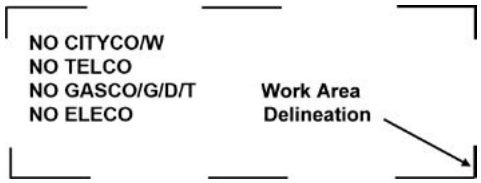
- If it can be determined through maps or records that the proposed excavation is obviously not in conflict with their facility, the locator or operator of the facility may notify the excavator of "No Conflict" by phone, fax, or e-mail, or through the one call center, where electronic positive response is used. Operators of multiple subsurface installations indicate a "No Conflict" for each facility (see the previous examples).

- Place "No Conflict" markings or flags in a location that can be observed by the excavator and/or notify the excavator by phone, fax, or e-mail that there is "No Conflict" with your subsurface installations. When the excavation is delineated by the use of white markings, place "No Conflict" markings or flags in or as near as practicable to the delineated area.

Caution: Allow adequate space for all facility mark-outs.

"No Conflict" indicates that the operator verifying the "No Conflict" has no subsurface installations within the scope of the delineation; or when there is no delineation, there are no subsurface installations within the work area as described on the locate ticket.

Example:



Common Abbreviations

Facility Identifier

CH	Chemical
E	Electric
FO	Fiber Optic
G	Gas
LPG	Liquefied Petroleum Gas
PP	Petroleum Products
RR	Railroad Signal
S	Sewer
SD	Storm Drain
SS	Storm Sewer
SL	Street Lighting
STM	Steam
SP	Slurry System
TEL	Telephone
TS	Traffic Signal
TV	Television
W	Water
W	Reclaimed Water "Purple"

Underground Construction Descriptions

C	Conduit
CDR	Corridor
D	Distribution Facility
DB	Direct Buried
DE	Dead End
JT	Joint Trench
HP	High Pressure
HH	Hand Hole
MH	Manhole
PB	Pull Box
R	Radius
STR	Structure (vaults, junction boxes, inlets, lift stations)
T	Transmission Facility

Infrastructure Material

ABS	Acrylonitrile - Butadiene - Styrene
ACP	Asbestos Cement Pipe
CI	Cast Iron
CMC	Cement Mortar Coated
CML	Cement Mortar Lined
CPP	Corrugated Plastic Pipe
CMP	Corrugated Metal Pipe
CU	Copper
CWD	Creosote Wood Duct
HDPE	High Density Polyethylene
MTD	Multiple Tile Duct
PLA	Plastic (conduit or pipe)
RCB	Reinforced Concrete Box
RCP	Reinforced Concrete Pipe
RF	Reinforced Fiberglass
SCCP	Steel Cylinder Concrete Pipe
STL	Steel
VCP	Vitrified Clay Pipe

Guide for Abbreviation Use

Follow these guidelines when placing abbreviations in the field:

- Place the Company Identifier at the top or at the left of the abbreviations.
- Place the abbreviations in the following order: Company Identifier / Facility Identifier / Underground Construction Descriptions / Infrastructure Material

Example: TELCO/TEL/FO/PLA indicates that TELCO has a telecommunication fiber optic line in a single plastic conduit. The use of the abbreviation /TEL is not necessary, because the orange marking would indicate that the facility was a communication line; but its use is optional.

- To omit one or more of the abbreviation types, use the order described above but omit the slash and abbreviation that does not apply.

Example: to omit /TEL, the result would be TELCO/FO/PLA.

IMPORTANT NUMBERS

Keep any important numbers you may need while working in the field. *4216.4 (d) Each excavator, operator, or locator shall communicate with each other and respect the appropriate safety requirements and ongoing activities of the other parties, if known, at an excavation site.*

Name/Company	Phone

-NOTES-