USAN 811

EXCAVATION HANDBOOK

811

Do Your Tickets Online

+ CREATE ↻ RENEW ⚙ MANAGE

YOUR TICKETS ALL IN ONE PLACE

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Revised July, 2026

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).

USA North 811

- Available 24/7 online or by phone
- www.usanorth811.org
- 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.

DigAlert

- 6AM - 7PM, Monday - Friday (closed holidays)
- www.digalert.org
- 811 / (800) 422-4133

Serving the following 9 counties in California:

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.

- Each person, company, or entity is required to have their own dig ticket, even when working on the same project or dig area. Each person or entity responsible for breaking ground must have a valid ticket with USA North 811. A ticket cannot be submitted on the behalf of another person, agency, or entity, and a ticket cannot include, or 'cover', multiple companies or entities for the same type of work or area. Everyone must have their own ticket.

- 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.

- 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 utility operators of underground installations, 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 each member has responded to the ticket.

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. 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.

TICKET TYPES

When submitting an 811 ticket, you must select a Ticket Type in the first section of the ticket entry window. The ticket type tells the notification center how far in advance your excavation is scheduled and helps determine which processing rules apply to your request.

Normal
Use a Normal ticket when your excavation is scheduled to begin 2 working days to 14 calendar days from the time the ticket is submitted.

- **Utility operator responses:** By the start date and time listed on your ticket.
- **Excavation may begin:** After all utility operators have responded and any required on site meeting has been completed.

Short
Use a Short ticket when your excavation is scheduled to begin 4 hours from now up to 1 minute before the legal start time (2 working days).

- **Utility operator responses:** Within 2 working days.
- **Excavation may begin:** After all utility operators have responded and any required on site meeting has been completed.

Rush
Use a Rush ticket when your excavation is scheduled to begin immediately up to 3 hours and 59 minutes from the time the ticket is submitted.

- **Utility operator responses:** Within 2 working days.
- **Excavation may begin:** After all utility operators have responded and any required on site meeting has been completed.

Emergency
Use an Emergency ticket only for situations requiring immediate action that meet the legal definition of an emergency under California Government Code 4216(f)(1).

- **Utility operator responses:** Within 2 working days.
- **Excavation may begin:** Immediately to address the emergency until the emergency has been resolved.

Agriculture/Flood Control
Use an Agriculture/Flood Control ticket for qualifying agricultural or flood control excavation projects.

- **Utility operator responses:** By the start date and time listed on your ticket.
- **Excavation may begin:** After all utility operators have responded and any required on site meeting has been completed.

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 two hours there is still no response, you may contact 811 again and submit another No Response notification. You can continue this process every two hours 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 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. You can request re-marks for all or only a portion of your site, but all work within the area that needs to be re-marked must cease.

DAMAGE NOTIFICATION

An excavator discovering or causing damage to a subsurface installation, including all breaks, leaks, nicks, dents, gouges, grooves, or other damage to subsurface installation lines, conduits, coatings or cathodic protection, shall immediately notify the subsurface installation operator.

USA North 811 accepts damage notices from the excavator and will transmit said notice to our members in the area of the damaged subsurface installation. We will also provide the excavator with the Emergency phone numbers 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.

EXPOSED NOTIFICATION

An excavator who has unintentionally exposed a subsurface installation, or exposed a line that was not marked, and has not damaged the line in any way can contact the notification center to notify the subsurface installation operator about the exposed line.

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

It is important to remember that when submitting an exposed notification, you are communicating that you have only exposed the subsurface installation and have not damaged the line as outlined in California Government Code Section 4216.4 (c). If the excavator has discovered or caused damage to the subsurface installation, they will need to submit a Damage Notification to the regional notification center and may be required to contact 911.

EMERGENCY NOTIFICATION

The regional notification center accepts emergency notifications. California Government Code Section 4216(f)(1) 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.

RETURN TRIP NOTIFICATION

If a utility operator is unable to mark your excavation area due to a lack of adequate pre-marks or is unable to gain access to the area with the information provided on your ticket, you will need to submit a return trip notification. Once you have sub-

mitted a return trip notification, the utility operator will have an additional two (2) working days to respond to the ticket.

Important: Before submitting a return trip notification, ensure that the previous issues with your excavation area have been resolved. For example, if your excavation area lacked adequate pre-marks, completely delineate the area before requesting a utility operator to return to the site.

NEXT JOB PHASE

In most cases, locations described on tickets should be no longer than a half mile. The "Next Job Phase" option is designed for excavators who need to create additional tickets when their excavation area exceeds the size limits of a single ticket according to the current ticket size policy. This feature allows the details from the previous ticket to be copied directly into a new ticket. A reference map will be included to show you where the mapping of the excavation area ended on the previous ticket. This makes it easier to create a new ticket for the next section of your work area based on the previous ticket. Users will need to update the mapping and work area description on the new ticket to reflect the section of work for this request.

PLANNING AND DESIGN REQUESTS

Locate request tickets should only be created when excavation work is scheduled to begin in the next 14 calendar days in accordance with California Excavation Law. If your project is still in the design stage and you need to know where the underground facilities are located, you will need to contact the facility operators directly to request that information. USA North 811 will provide the relevant contact information for the utility operators in the area. You can go to our website, usanorth811.org, and select the "Project Design" option to obtain the facility operator's contact information.

Once you have obtained the contact information for the facility operators in the area, you can provide a map, or plans, and a description of your project to the affected facility operators and

request information about any facilities that may be in conflict with the project. Use that information from the facility operators to design your project and coordinate any facility relocations.

If maps provided by a facility operator do not offer the level of precision needed for your project, you may request that the operator mark the facilities in the field. However, utility operators are not required to provide field markings for design purposes. This coordination should be done WITHOUT creating a locate request ticket on a negotiated marking schedule.

Facility operators should respond to planning and design requests in a timely manner so as to encourage engineers to follow this process instead of creating locate request tickets for design purposes. Engineers and project designers should not create locate request tickets for design purposes. Locate request tickets should only be created after the engineering has been completed, all utility conflicts have been identified, and excavation work is scheduled to begin within the next 14 calendar days.

Tickets can be created to pothole utilities, but those should only be created after the engineering has been completed, and each individual pothole location has been identified and delineated in the field. Tickets should request markings within a small radius (e.g. 10 ft) of each pothole location.

TICKET SIZE POLICY

Effective July 1st, 2021, the Ticket Continuity Committee enacted the following Ticket Size Policy statewide:

- Locations described on tickets should be no longer than a half mile.
- Half mile segments should start and/or end at intersections whenever possible.
  - If using an intersection isn't practical, footage between locations pre-marked in white can be used instead.
- Extending from the road into property cannot go so far as to extend into other properties that face other roads, or so far

as to enter another road altogether.

- If a single parcel or address location is larger than half a mile, it is exempt from the half mile rule.
- If work is on or alongside a freeway, railroad tracks, or waterways, the maximum distance is two miles. This also applies to following a power pole corridor or pipeline right of way in a rural area.
    - A freeway is defined as a highway that has on-ramps and off-ramps.
- Two mile segments should start and/or end at on-ramps and off-ramps, mile markers, or cross streets.
    - If none of the above is practical, footage between locations pre-marked in white can be used.
- You can submit 'intermittent' locations along a road for street signs, power poles, trees, etc., if the distance between each location is specified.
    - The number of locations should be specified on the ticket and marked appropriately in the field.
- Intermittent locations that are very close together, such as fence posts, can be considered a 'continuous' location, marked with a starting and end point.
- 'Bounded area' locations cannot contain any named public streets.
    - Internal roads, private roadways, private driveways, trails, or other unnamed roads are exempt from this rule.

There are some exceptions to the above:

- Center Operations Supervisors may allow exemptions to any rule when warranted.
- All tickets that fall outside of these rules have been pre-approved.
- Existing tickets issued prior to the effective date are grandfathered in and will not need to be re-submitted.
- Existing tickets where street names were not present when

issued, but appear after a map update, will be considered grandfathered if those roads do not yet physically exist in the field.

ELECTRONIC POSITIVE RESPONSE

California Government Code 4216 states that all California utility members of USA North 811 are required to use the Electronic Positive Response system when responding to excavator's tickets. Electronic Positive Response is a system that allows utility operators to record how they responded to an excavator's 811 ticket. USA North 811 will then display this information so that excavators can view the progress of the utility operator's responses. 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/epr to see every response by the members on their ticket in one location.

It is mandatory for utility members to use the Electronic Positive Response system in California and Nevada.

Electronic Positive Response Codes and Descriptions

Response Code	Description
000	Reserved for system use only
001	Clear - No Conflict
003	Existing Markings Adequate
004	No Markings Requested
010	Locate Area Marked
014	Partially Marked - More Time is Needed
015	Provided Facility Location Information To Excavator (4216.3(a)(1)(A)(ii))
016	Operator has located and marked all subsurface installations known to be embedded in the pavement (4216.3 e)
020	Bad address/incorrect street/location info - New ticket required
021	No Access To Locate Area - Resend Ticket Requested
022	No Delineation - Resend Ticket Requested
031	Requires Stand By At Time Of Excavation - Contact Facility Owner
033	High Priority Line in Area - On Site Meeting Required
034	Field Meet Required - Contact Facility Owner to Schedule

040	Excavator Completed Work Prior To Due Date
041	Excavator No-Show For Meet
042	Excavator Canceled Request (System Use Only)
050	Negotiated Marking Schedule
051	Mutually Agreed To a Later Start Date and Time (4216.3(a)(1)(a))
053	Scheduled Meet With Excavator At Requested Date and Time
080	Extraordinary Circumstances Exist - No Locate Due To Weather/Emergency/Safety Conditions
999	Member Did Not Respond By Required Time (System Use Only)

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 near by, 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.

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.

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 location information to excavator (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 ex-

cavator 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.

016: Operator has located and marked all subsurface installations known to be embedded in the pavement (4216.3 e)

Definition: The member located and marked all known facilities embedded in the pavement.

When to use: When ONLY the embedded lines are marked.

020: Bad address/incorrect street/location info - New Ticket Required

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 a return trip 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.

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.

033: High priority line in area - On Site Meeting Required

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.

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 (System Use Only)

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

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

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.

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.

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

ONLINE OPTIONS FOR SUBMITTING TICKETS

Online Ticket Program - OneCallAccess

The OneCallAccess (OCA) 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, go to usanorth811.org or email weboperations@usan.org.

ONLINE TOOLS FOR MEMBERS

Electronic Positive Response (EPR) for Members

Posting a response to the EPR system is easy to do as a member. Using the Damage Prevention Portal, you can easily view and post your response to your tickets in one place. Every ticket that you receive will be found inside your Damage Prevention Portal account where you will be able to manage your responses and membership details. For more information, contact Member Services at memberservices@usan.org.

CONTACTS AT USA NORTH 811

Call Center: (800) 642-2444
(Direct 800 number if calling from outside of our territory)

Operations:
weboperations@usan.org (925) 222-6510
(Online Ticket Program)

Member Services: (925) 222-6501
memberservices@usan.org
(Area of Interest, Contact Info Updates, Membership Questions)

Marketing & Education:
education@usan.org (925) 222-6514
(Promo items/education requests)

CGA Best Practices - Appendix B

Uniform Color Code

& Marking Guidelines

https://bestpractices.commongroundalliance.com

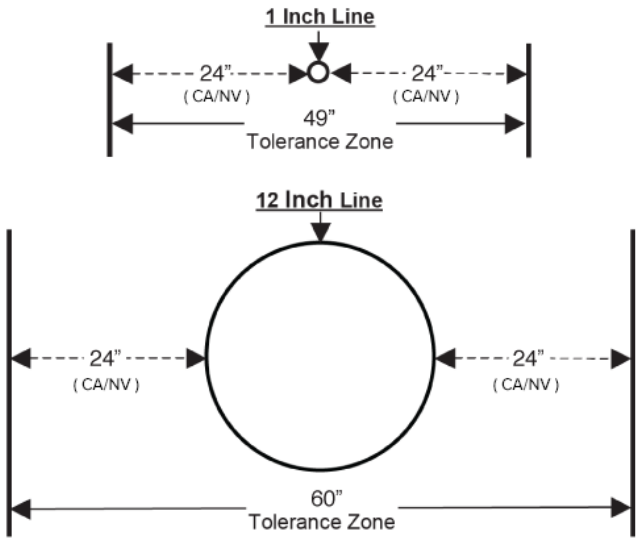
Uniform Color Code

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

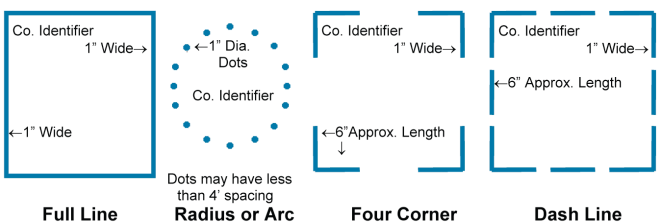
The following examples are of tolerance zones for a 1 in. and 12 in. line:



Guidelines for Excavation Delineation

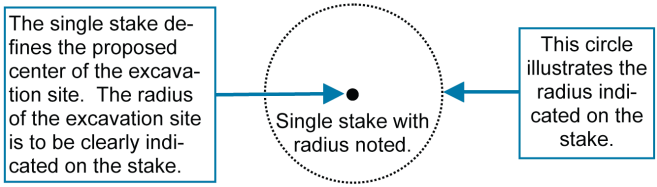
The following marking illustrations are examples of how excavators may choose to mark their area of proposed excavation. The use of white marking products (e.g., paint, flags, stakes, whiskers, or a combination of these) may be used to identify the excavation site.

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.

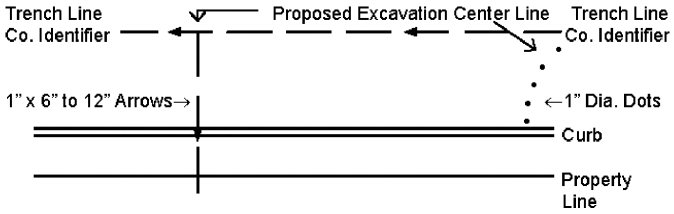
Single Stake Marking Center Point of Excavation Site



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

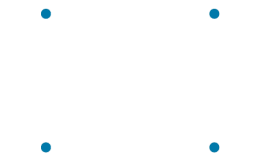
Other Continuous-Type Excavations



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



Stakes, Flags or Whiskers
Marking Four Corners



Stakes, Flags or Whiskers
Marking Outline of Excavation

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).

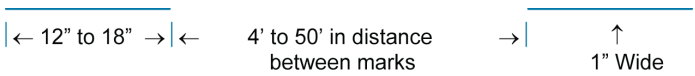
Guidelines for Operator Facility Field Delineation

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.).

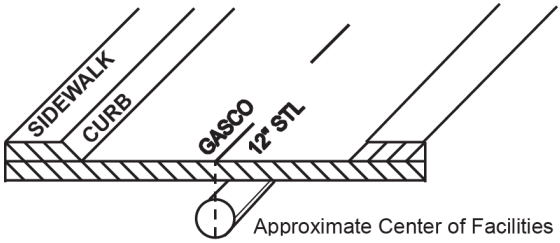
Use paint, flags, stakes, whiskers, or a combination to identify the operator's facility(s) at or near an excavation site.

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.

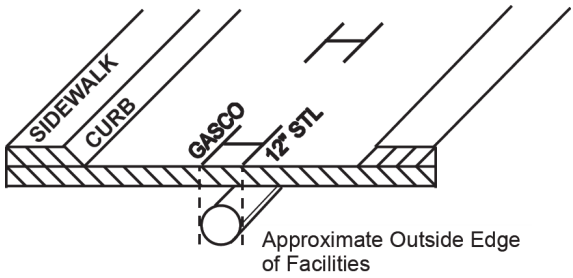


2. The following marking examples illustrate how an operator may choose to mark their subsurface installations:

   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:



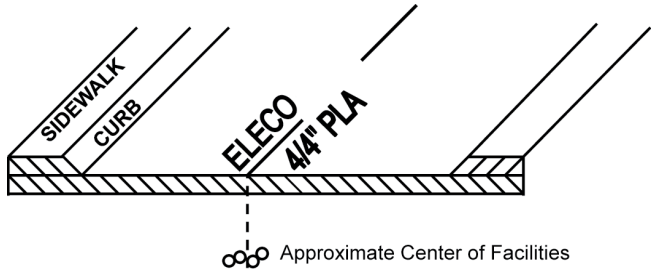
or 2) placing the marks over the approximate outside edges of the facility with a line connecting the two horizontal lines (in the form of an H) to indicate there is only one facility:



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.

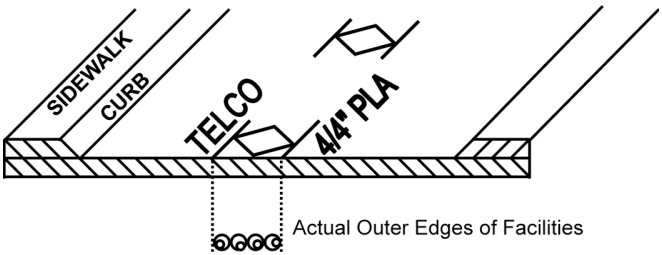
b. Multiple Facility Marking: Used to mark multiple subsurface installations of the same type (e.g., electric), where the separation does not allow for a separate tone for each facility, but the number and width of the subsurface installations is known. Marks are placed over the approximate center of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



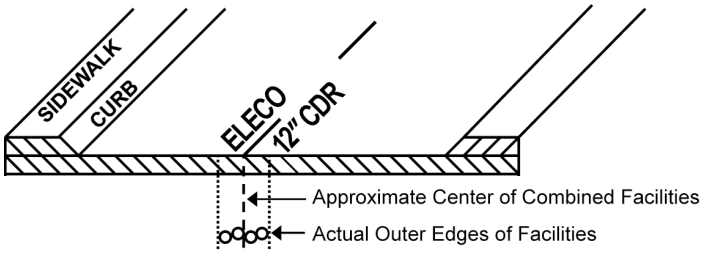
c. Conduit Marking: Used for any locatable facility being carried inside conduits or ducts. The marks indicating the outer extremities denote the actual located edges of the subsurface installations being represented.

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



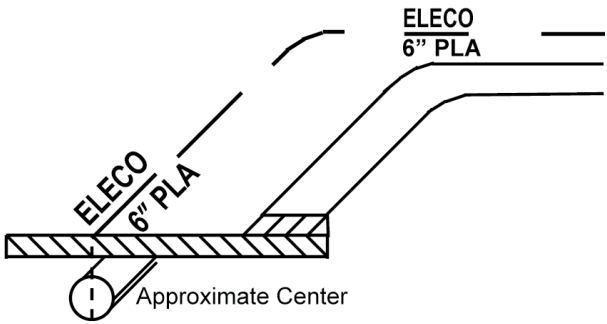
d. Corridor Marking: Used to mark multiple subsurface installations of the same type (e.g., electric), bundled or intertwined in the same trench, where the total number of subsurface installations is not readily known (operator has no record on file for the number of subsurface installations). Marks 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)

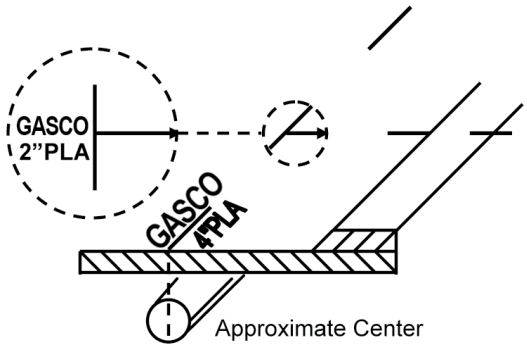


3. Changes in direction and lateral connections are clearly indicated at the point where the change in direction or connection occurs, with an arrow indicating the path of the facility. A radius is indicated with marks describing the arc. When providing offset markings (paint or stakes), show the direction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

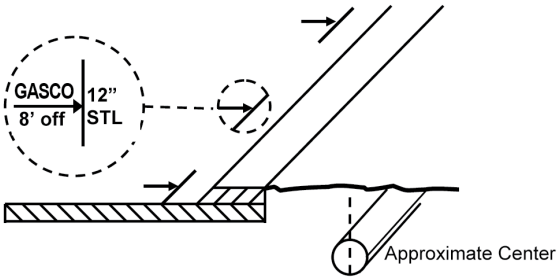
Example: radius



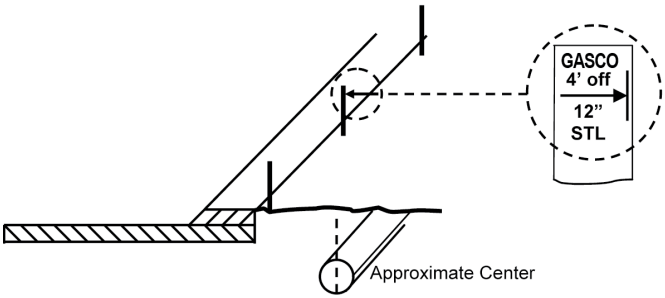
Example: lateral connection



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

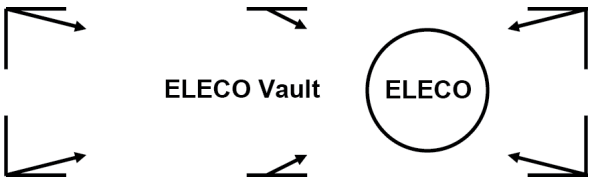
5. Subsurface installations installed in a casing are identified as such.

   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).

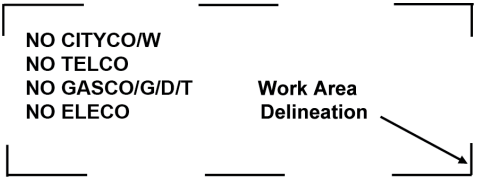
- Place "No Conflict" markings or flags in a location that can be observed by the excavator and/or notify the excavator by phone, fax, or e-mail that there is "No Conflict" with your subsurface installations. When the excavation is delineated by the use of white markings, place "No Conflict" markings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

face 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-