Guidelines for Operator's Facility Field Delineation

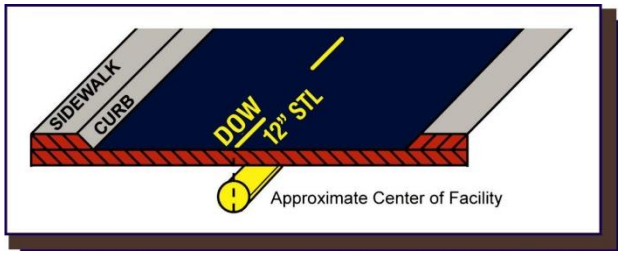
Operator markings of facilities include; the appropriate color for their facility type; their company identifier (name, initials, or abbreviation) when other companies are using the same color, the number and width of their facilities and a description of the facility (HP, FO, STL etc). Use paint, flags, 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 to be approximately 12" to 18" in length and 1" inch in width and separated by approximately 4' to 50' in distance as an example. When marking facilities the operator is to consider the type of facility being located, the terrain of the land, the type of excavation being done and the method to adequately mark its facilities for the excavator.

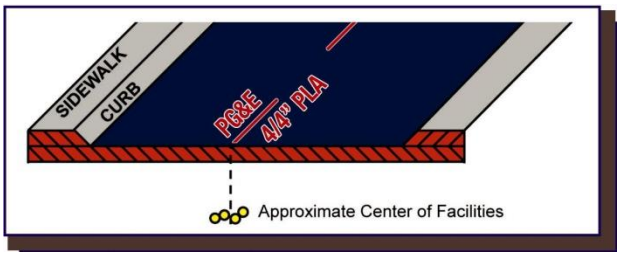
I----------I	4' - 50'	I----------I	1" in Width
12" – 18"	Between marks	12" – 18"	
In length		In length	

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

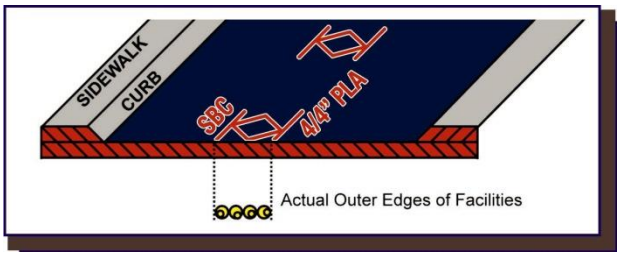
    - **Single Facility Marking:** Used to mark a single facility, marks are placed over the approximate center of the facility. This example indicates an operator's 12" facility. When a facility can be located or toned separately from other facilities of the same type it is marked as a single facility.



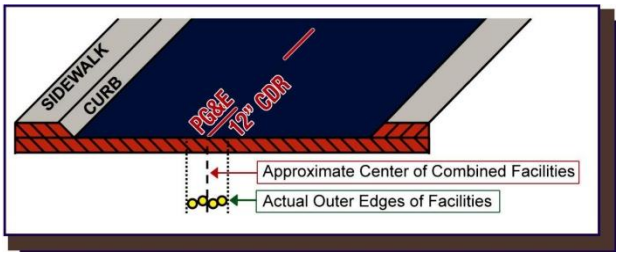
- **Multiple Facility Marking:** Used to mark multiple facilities of the same type (e.g. electric), where the separation does not allow for a separate tone for each facility but the number and width of the facilities is known. Marks are placed over the approximate center of the facilities and indicate the number and width of the facilities. This example indicates 4 plastic facilities that are 4” in diameter (4/4” PLA).



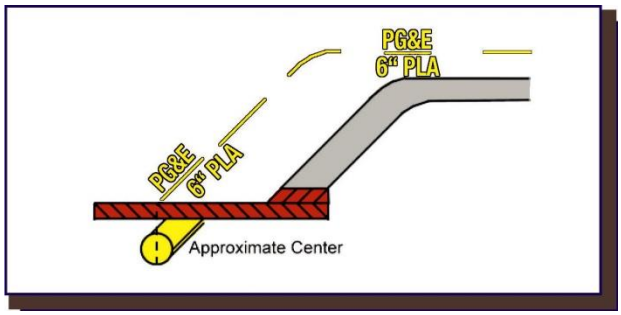
- **Conduit Marking:** Used for any locatable facility being carried inside conduits or ducts. The marks indicating the outer extremities denote the actual located edges of the facilities being represented. An example would be 4 plastic conduits that are 4” in diameter (4/4” PLA), and the marks are 16” apart indicating the actual left and right edges of the facilities.



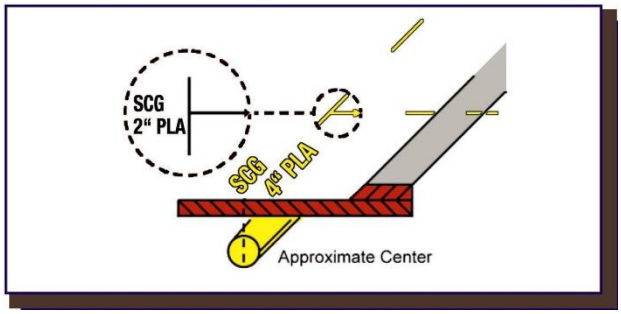
- **Corridor Marking:** Used to mark multiple facilities of the same type (e.g. electric), in the same trench where the total number of facilities is not readily known (operator has no record on file for the number facilities) and that are bundled or intertwined. Marks are placed over the approximate center of the facilities and indicate the width of the corridor. The width of the corridor is the distance between the actual located outside edges of the combined facilities. This example indicates a 12” corridor (12” CDR).



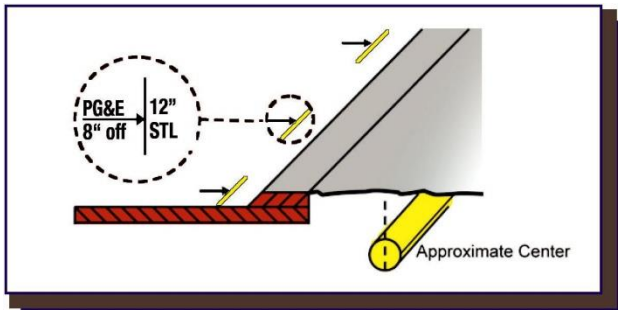
3. Changes in direction and lateral connections are to be clearly indicated at the point where the change in direction or connection occurs with an arrow indicating the path of the facility. A radius is indicated with marks describing the arc. When providing offset markings, (paint or stakes), show the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



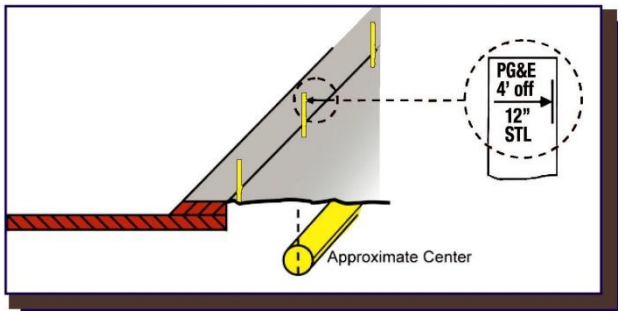
RADIUS EXAMPLE



LATERAL CONNECTION EXAMPLE



PAINTED OFFSET (OFF) EXAMPLE



STAKED OFFSET (OFF) EXAMPLE

4. An operator's identifier (name, abbreviation or initials) is to be placed at the beginning and at the end of the proposed work. In addition to the previous, subsequent operators using the same color will mark their company identifier at all points where their facility crosses another operator's facility using the same color. The maximum separation of identifiers is to be reduced to a length that can be reasonably seen by the excavator when the terrain at the excavation site warrants it. For example:

AT&T **CITIZENS** **VERIZON**

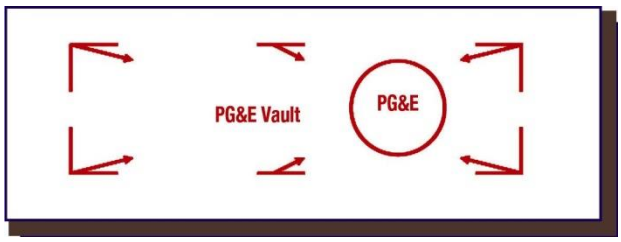
5. Information as to the size and composition of the facility is to be marked at an appropriate frequency. Examples are: the number of ducts in a multi-duct structure, width of a pipeline, and whether it is steel, plastic, cable, etc.

CCWD	RSVTL	DOW
4" PLA	9" PLA	12" STL

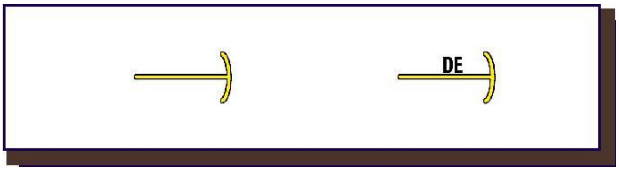
6. Facilities installed in a casing should be identified as such. Two examples are: 6” plastic in 12” steel = 6”PLA/12”STL and fiber optic in 4” steel = FO (4”STL).

AT&T 6”PLA/12”STL FO (4”STL)

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



8. Termination points or dead ends are to be indicated as such.



9. When there is “No Conflict” with the excavation complete one or more of the following:

    - Operators of a single type of facility (e.g. AT&T) would mark the area “NO” followed by the appropriate company identifier in the matching APWA color code for that facility (e.g. “NO AT&T”)
    - Operators of multiple facilities would 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 that there is “NO CONFLICT” (e.g. “NO PG&E/G/D”).The example illustrates that PG&E has no gas distribution facilities at this excavation site. The abbreviation for; gas transmission facilities is “G/T”, electric distribution is “E/D” and electric transmission is “E/T” these should be used when appropriate.

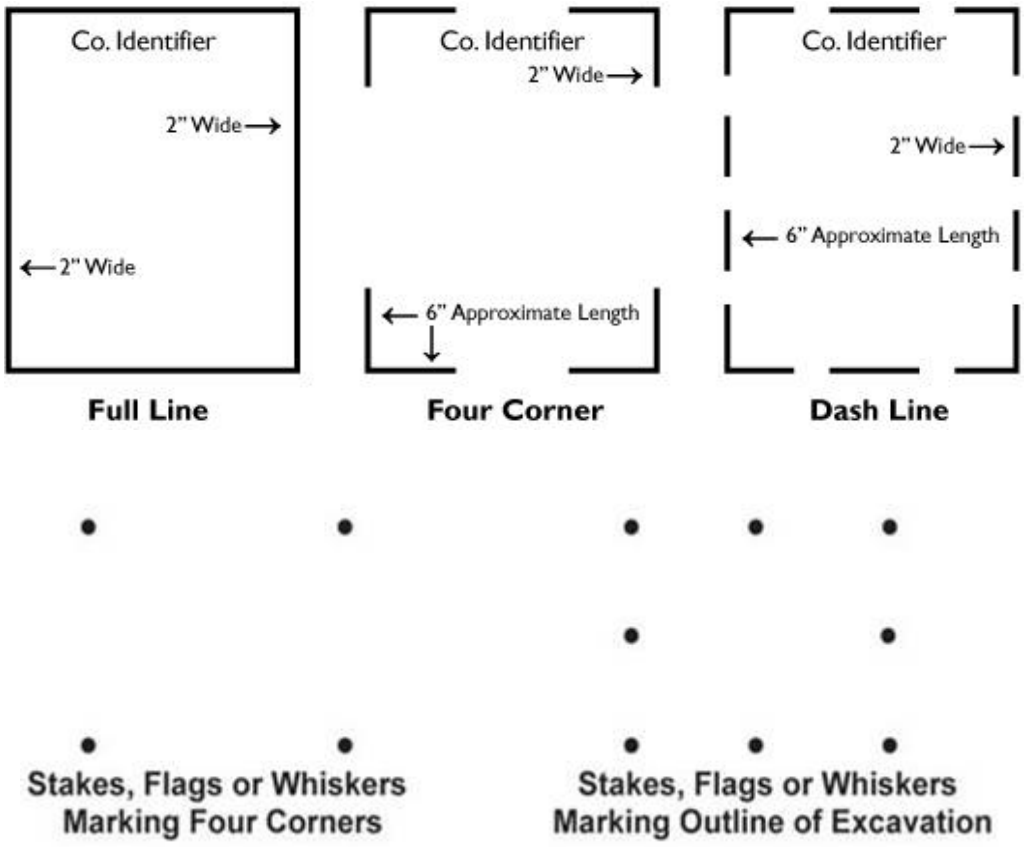
- Place a clear plastic (translucent) flag that states “No Conflict” in lettering matching the APWA color code of the facility that is not in conflict. Include on the flag the operator’s identifier, phone number, a place to write the locate ticket number and date. Operators of multiple facilities would indicate on the flag which facilities were in “No Conflict” with the excavation as in the previous example.
- If it can be determined through maps or records that the proposed excavation is obviously no in conflict with their facility(s) the locator or operator of the facility may notify the excavator of “No Conflict” by phone, fax, email, or through the One-Call Center, where electronic positive response is used. Operators of multiple facilities would indicate a “No Conflict” for each facility as in 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 email that there is “No Conflict” with your facilities. 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 delignated area.

  *Caution – Allow adequate space for all facility mark-outs.

“No Conflict” indicates; that the operator providing the “No Conflict” has no facilities within the scope of the delineation, or when there is no delineation, there are no facilities within the work area as described on the locate ticket.

COLOR CODE IDENTIFIERS

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 Conduits
BLUE	Potable Water
PURPLE	Reclaimed Water, Irrigation and Slurry Lines
GREEN	Sewers and Drain Lines



Guide for Abbreviation Use

This is a guide for placing the accompanying abbreviations in the field. The company identifier is to be placed at the top or at the left of the abbreviations. Place the abbreviations in the following order, Company Identifier/Facility Identifier/Underground Construction Description/Infrastructure Material (e.g. SBC/TEL/FO/PLA). This example indicates that SBC 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 leave out one or more of the abbreviation types you would continue to follow the order of the abbreviations above leaving out the slash and abbreviation that does not apply (e.g. /TEL), the result would be the following SBC/FO/PLA.

UNDERGROUND CONSTRUCTION DESCRIPTION

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

FACILITY IDENTIFIER		INFRASTRUCTURE MATERIALS	
CH	Chemical	**ABS**	Acrylonitrite-Butadiene-Styrene
E	Electric	**ACP**	Asbestos Cement Pipe
FO	Fiber Optic	**CI**	Cast Iron
G	Gas	**CMC**	Cement Mortar Coated
LPG	Liquefied Petroleum Gas	**CML**	Cement Mortar Lined
PP	Petroleum Products	**CPP**	Corrugated Plastic Pipe
RR	Railroad Signal	**CMP**	Corrugated Metal Pipe
S	Sewer	**CU**	Copper
SD	Storm Drain	**CWD**	Creosote Wood Duct
SS	Storm Sewer	**HDPE**	High Density Polyethylene
SL	Street Lighting	**MTD**	Multiple Tile Duct
STM	Steam	**PLA**	Plastic (conduit or pipe)
SP	Slurry System	**RCB**	Reinforced Concrete Box
TEL	Telephone	**RCP**	Reinforced Concrete Pipe
TS	Traffic Signal	**RF**	Reinforced Fiberglass
TV	Television	**SCCP**	Street Cylinder Concrete Pipe
W	Water	**STL**	Steel
W	Reclaimed Water (purple)	**VCP**	Vertrified Clay Pipe